The Colorado Quarterly

THE UNIVERSITY OF COLORADO

J. ROBERT OPPENHEIMER
REFLECTIONS ON SCIENCE AND CULTURE

Jan S. Prybyla
HOW TO FIGHT COMMUNISM

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HUMOR IN MUSIC

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Reflections on science and culture

J. ROBERT OPPENHEIMER

We live in an unusual world, marked by great and irreversible changes occurring within the span of a man's life. We live in a time when our knowledge and understanding of the world of nature grows wilder, broader, and deeper with unparalleled speed and scope and when the problems of applying this knowledge to man's needs and hopes are new and only a little illuminated by our past history.

Indeed it has always in traditional societies been the great function of culture to keep things rather stable and quiet and unchanging. It has been the function of tradition to assimilate one epoch to another, one episode to another, even one year to another. It has been the function of culture to bring out meaning, by pointing out the constant traits of human life, which in easier days one talked about as the eternal verities, and to let the meaning shine from the fact that some things could be counted on to be there, to be steady in spite of the flux with which nature surrounds us. In the most primitive societies—if one believes the anthropologists—the principal function of ritual, religion, of culture as it is practiced is, in fact, almost to stop change. It is to provide for the social organism what life provides in such a magic way for living organisms, a kind of homeostasis, an ability to remain intact, to respond only very little to the obvious convulsions and alterations in the world.

Today, culture and tradition have assumed a very different intellectual and social purpose; as I shall point out later, the principal function of the most vital and living traditions today is precisely to provide the instruments of rapid change. There are many things which go together to bring about this alteration in man's life, but probably the decisive one is science itself. I shall use that word as broadly as I know, meaning the natural sciences, meaning the historical sciences, meaning, as I shall show more sharply later, all those matters on which men can converse objectively with each other. I shall not continually repeat the distinction between

science as an effort to understand the world and to find out about it and science, in its applications in technology, as an effort to do something useful with the knowledge so acquired. But certain care is called for, because if we call this the scientific age, we make more than one kind of oversimplification. On the one hand, a good deal goes along with its being a scientific age—culturally, practically, technologically, economically, spiritually—which are concomitants historically though perhaps not inevitably. And, on the other hand, when we talk about science today, we are likely to think of the biologist with his microscope or the physicist with his cyclotron; but almost certainly a great deal that is not now the subject of successful study, scientific study, will later come to be. I think we probably today have under cultivation only a small part of the terrain which will be natural for the sciences a century from now. I think of the enormously rapid growth in many parts of biology. I think of the fact that man is a part of nature and, as a part of nature, not uninteresting, and very open to study. These things are going to grow much more than we can now imagine.

I stress that, in a sense to which I must return, any subject on which ambiguity of communication presents no real problems has the character of a science and of objectivity. It is not an easy thing to get it started, but once started it grows at a fantastic rate. The reason for this great change from a slowly moving, almost static world, to the world we live in, is the cumulative character, the firmness, the givenness of what has been learned about nature. It is true that it is transcended when one goes into other parts of experience. What is true on the scale of the inch and the centimeter may not be true on the scale of a billion light years; it may not be true either on the scale of a one hundred billionth of a centimeter; but it stays true where it was proven. It is fixed. And so everything that is found out is added to what was known before, enriches it, and does not have to be done over again; one has this essentially cumulative, irreversible character of learning things, which is the hallmark of science. There is nothing irreversible about art. It is there. It will never go away; but it is not primarily to be built upon. It is primarily to be enjoyed and understood, perhaps imitated, but not primarily or characteristically to be imitated.

It is this irreversible character which means that in man's history the sciences make changes which cannot be wished away and cannot

be undone. Let me give two quite different examples. There is a lot of talk about getting rid of atomic bombs. I like that talk; but we must not fool ourselves. The world is not going to be the same, no matter what we do with atomic bombs, because the knowledge of how to make them cannot be exorcised. It is there; and all our arrangements for living in a new age must bear in mind its omnipresent virtual presence and the fact that one cannot change that. A different example is from long ago. We can never have again the centrality and importance of our physical habitat, now that we know something of where the earth is in the solar system and know that there are hundreds of billions of suns in our galaxy and hundreds of billions of galaxies within reach of the great telescopes of the world. We can never again make the dignity of man's life have anything to do with the special character in space and time and mechanics of the place where he happens to live.

These are irreversible changes; so it is that the cumulative character, the irreversibility or the growth of the sciences, gives a paradigm, an example of something which is, in other respects, very much more subject to question: the idea of human progress. One cannot doubt that in the sciences the only direction of growth is progress. One learns more. One may learn that one has made a mistake, but that is still to learn more. One may learn that what one has learned is qualified, but that is still to learn more. This is true both of the knowledge of fact, the understanding of nature, and the knowledge of skill, of technology, of learning how to do things. When one applies this example, for instance, to the human situation and complains that we make great progress in automation and computing and space research but no comparable moral progress, this involves a total misunderstanding of the difference between the two kinds of progress. I do not mean that moral progress is impossible, but it is not, in any sense, automatic. Moral regress is just as possible; scientific regress is not compatible with the continued practice of science.

What I want to do in this essay is not very pretentious. I want to discuss some points, some questions or theses on the nature of science and its inter-connection with culture. It is my modest hope that writing about these questions may give ground for future discussion. I have no simplist view. I cannot subscribe to the notion that science and culture are coextensive, that they are the same thing

with different names nor to the view that science is something useful but essentially unrelated to culture. I think that we live in a time which has few historical parallels, that there are practical problems, problems of human institutions, their obsolescence and their inadequacy, problems of the mind and spirit which, if not more difficult than ever before, are different and are very difficult. I think that we have new problems, along with many new insights and many new hopes. It is thus only to start some conversations that I have to present a few questions and here and there some affirmations.

Let us begin with a synopsis of what these questions are. The first has to do with the problem of why the scientific revolution happened when it did; the second with the characteristic growth of the sciences; the third with their characteristic internal structure; the fourth with the relation of discovery in the sciences to the general ideas of man in matters which are not precisely related to the sciences; the fifth with freedom and necessity in the sciences, with the creative and the open character of science, its infinity, if you want; and the last has to do with what direction we might try to move in bringing coherence and order to our cultural life, in doing what it is proper for a group of intellectuals—artists, philosophers, teachers, scientists, and statesmen—to do in order to help refashion the institutions of this world, which need refashioning if we are to survive.

It is not a simple task to answer the question of why the scientific revolution occurred when it did. The revolution started—I think all serious historians would agree—in the late Middle Ages and the very early Renaissance. But it was very, very slow in getting started.

No great culture has been free of curiosity, of reflection, of contemplation, and of thought. "To know the causes of things" is something that serious men have always wanted, in a quest that serious societies have sustained. No great culture has been free of inventive genius. If we think of the culture of Greece, and of the following Hellenistic and Roman period, it is particularly puzzling that the scientific revolution did not occur then. The Greeks discovered something without which our contemporary world would not be what it is: standards of rigor, the idea of proof, the idea of logical necessity—that one thing implies another; without that

science is very nearly impossible, because unless there is a quasi-rigid structure of implication and necessity, if something turns out not to be what one expected, one will have no way of finding out where the wrong point is: one has no way of correcting himself. But this is something that the Greeks had very early in their history. They were curious. They were inventive. They did not experiment in the scale of modern days, but they did many experiments. They had—and this is a fact that we have only recently appreciated—a very high degree of technical and technological sophistication. They could make very subtle and complicated instruments and they did. They did not write much about it. I think that possibly the Greeks did not make the scientific revolution because of some flaw in communication; but by what we know of their achievement, it was very good. They were a small society; they talked freely with each other, and the record of these talks is even today an inspiring thing to read. It may be that there were not quite enough people involved.

I believe that none of these ideas about the Greeks offer us the right answer as to why the scientific revolution took place when it did. Indeed in a matter of history, you cannot assign a unique cause precisely because the event itself is unique; you cannot test to see if you have it right. I think that the best guess is that it took something that was not present in Chinese civilization, that was wholly absent in Indian civilization, and that was absent also from Greco-Mediterranean civilization. It took an idea of progress, not limited to better understanding, for this idea the Greeks had. It took an idea of progress which has more to do with the human condition, which is well expressed by the second half of the famous Christian dichotomy—faith and works: the notion that the betterment of man's condition, his civility, had meaning, that we all had a responsibility to it, a duty to it and to man. I think that it was when this basic idea of man's condition, which supplements the other worldly aspects of religion, was fortified and fructified between the thirteenth and the fifteenth centuries by the rediscovery of the ancient world, of the Greek scientists, philosophers, and mathematicians, that there was the beginning of the scientific age, a forerunner of today's scientific age.

It was very slow at first and marked by individual giants, by Kepler, by Newton. By the seventeenth century there were enough men involved in improving human knowledge or useful knowledge

—phrases varied from country to country—so that societies were formed, the Royal Society, the Academy, many others, where people could talk to each other and bring to the prosecution of science that indispensable element of working together, of communication, of correcting the other fellow's errors and admiring the other fellow's skills, of creating the first truly scientific communities. This was celebrated in the Enlightenment of the eighteenth century; you find this combined spirit of fraternity and progress and an unending increase in knowledge very much in the early documents of the founding of the United States, not least in Jefferson.

Just before Newton, Hobbes could write "the Sciences are small power" and go on to say that the reason was that only those who made a science ever knew what it was about. A century later every writer was saying just the opposite and basing his hopes for the freedom of man on the progress of science. This context in which the sciences were born has also to some extent accompanied them. Science was born in a context of fraternity, even of universal brotherhood. It encouraged a political view which was egalitarian, permissive, liberal—everything for which the word "democratic" is today justly and rightly used. And the result is that the scientific world of today is also a very large one: an open world in which, of course, not everybody does everything, in which not everybody is a scientist, in which not everybody is a prime minister, but in which we fight very hard against inappropriate, arbitrary exclusion of people from any works, any deliberation, any discourse, any position for which their talents and their interests suit them. The result is that we are facing our new problems created by the practical consequences of technology, and the enormous intellectual consequences of science itself, in the context of a world of two or three billion people, in the context of an enormous society, in the context of a large society for which no human institutions were really ever designed. We are facing a world in which growth is characteristic, not just of the sciences themselves, but of the economy, of technology, of the spread of all institutions; no one can open a daily paper without seeing the consequences.

We have spoken of the growth of science, noting that it is started slowly. I am convinced that there are many sciences that are not yet started or that are just at the beginning where the outsider can

hardly notice. But from the thirteenth century to the twentieth is a long time. One can measure this growth in a number of ways, but it is important not to mistake things. The excellence of the individual scientist does not change much with time. His knowledge, his power does, but not the high quality that makes him great. We do not look to anyone to be better than Kepler or Newton, any more than we look to anyone to be better than Sophocles, any doctrine to be better than the gospel of St. Matthew or the Bhagavad-Gita. Yet one can measure things and it has been done. One can measure how many people work on scientific questions. One can count them. One can notice how much is published.

These two criteria show a doubling of scientific knowledge in every ten years. I have a friend who calculated of one journal, an American journal for fundamental physics, that if it continued to grow as rapidly as it has between 1945 and 1960, it would weigh more than the earth during the next century. In fifteen years, the volume of chemical abstracts has quadrupled; and in biology the changes are faster still. Today, if you talk about scientists, and mean by that people who devote their lives to the acquisition and application of new knowledge, then 93 percent are still alive. This enormously rapid growth, which has been sustained over two centuries, means, of course, that no man learned as a boy more than a small fraction in his own field of what he ought to know as a grown man.

There are several points to keep in mind. One is that one would naturally think that if we are publishing so much it must be trivial. I think that this is not true: any scientific community, any sane people, would protect itself against that, because we have to read what is published. I have to read everything in my own field. Yet the argument not to permit the accumulation of trivial, unimportant things which are not really new, which do not add to what was known before, is an overwhelmingly strong argument.

The second point is that one may say that every new thing renders what was known before uninteresting, that one can forget as rapidly as one learns. That is in part true: whenever there is a great new understanding, a great new element of order, a new theory, as one says, or a new law of nature, then much that before had to be remembered in isolation becomes connected and becomes, to some extent, implied and simplified. Yet one cannot forget what went before, because usually the meaning of what is discovered in 1961

is to be found in terms of things that were discovered in 1955 or 1956 or earlier, depending on how old the science is, when it really began. These are the things in terms of which the new discoveries are made. These are the origins of the instruments that give us the new discoveries, the origins of the concepts in terms of which they are discovered, the origins of the language, the origins of the tradition.

A third point: if one looks to the future of something that doubles every ten years, there must come a time when it stops, just as *The Physical Review* cannot weigh more than the earth. We know that this will saturate; we know that it will saturate probably at a level very much higher than today; there will come a time when the rate of growth of science is not such that in every ten years the amount that is known is doubled, but the amount that is added to knowledge then will be far greater than it is today. We know that more people will be involved in the end; we rather think that we must find ways to make a very good thing of this, rather than something of which to be frightened. For this rate of growth suggests that just as the professional must, if he is to remain professional, live a life of continuous study, so we may find a clue here also to the more general behavior of the intellectual with regard to his own affairs and those of his colleagues in somewhat different fields. It is clear just in the most practical, mechanical way that a man will have some choice, though he may try to choose both; he may choose to continue to learn about his own field in an intimate, detailed, knowledgeable way, so that he knows what there is to know about it; but then the field will not be very wide; his knowledge will be highly partial of science as a whole, but very intimate and very complete of his own field. He may, on the other hand, choose another path, which is to know generally, superficially, a good deal about what goes on in science, but without competence, without mastery, without intimacy, without depth. The reason for emphasizing this is that the cultural values of the life of science almost all lie in the intimate view: it is here that the hard lessons, the real choices, the great discoveries, the great disappointments, the new techniques are vivid and clear and detailed, and not in the general encyclopedia-like description of what the progress of science is all about.

In such a world it is clear that the structure of the sciences cannot

be very simple. It cannot just be that everything is related to everything else with the same intimacy. All sciences grow out of common sense. They all grow out of curiosity and observation, out of reflection; one starts by refining one's observation and one's words, and by exploring and pushing things a little further than they occur in ordinary life. And in this novelty there are surprises; one revises the way one talks about things to accommodate the surprises; then the old way of talking gets to be so cumbersome and inappropriate that one realizes that there is a big change called for, and one recreates one's way of talking about this part of nature.

All through this one follows the rule that one is prepared to say what one has done, what one has found, and to be patient and wait for others to see if they find the same things, and to reduce, to the point where it really makes no further difference, the normally overpoweringly vital element of ambiguity in human speech. We live by being ambiguous, by not settling things because they do not have to be settled, by suggesting more than one thing because their copresence in the mind may be a source of beauty. But in talking about science one may be as ambiguous as ever until he comes to the heart of it; then we tell a fellow just what we did in terms that are intelligible to him, because he has been schooled to understand them, and we tell him just what we found; we tell him just how we did it. If he does not understand us, we go to visit him and help him; and if he still does not understand us, we go back home and do it over again. This is the way in which the firmness and solidity of science is established.

How then does it go? In studying the different parts of nature, one explores with different instruments, one explores different objects; so one gets a branching of what at one time had been common talk, common sense. Each branch develops new instruments, new ideas, new words suitable for describing that part of the world of nature. This tree-like structure, all growing from the common trunk of man's common primordial experience, has branches no longer associated with the same questions, nor the same words, the same techniques. The unity of science, apart from the fact that it all has a common origin in man's ordinary life, is not a unity of deriving one part from another, nor of finding an identity between one part and another, between let us say, genetics and topology, to take two impossible examples, where there is indeed some connection.

The unity consists of two things: first and ever more strikingly, an absence of inconsistency. You may talk of life in terms of purpose and adaptation and function, indeed it is hard not to talk so; but you will find in living things no tricks played upon the laws of physics and chemistry, laws that will just be not very interesting in connection with the great problems of living things. We find a total consistency. Of course, in this I should speak, not of the future, but only of our past experience. We find between the different subjects, even as remote as genetics and topology, an occasional sharp mutual relevance. They throw light on each other. They have something to do with each other. Often the greatest things in the sciences occur when two different discoveries made in different worlds turn out to have so much in common that they are examples of a still greater discovery.

The image is not that of an ordered array of facts in which every one follows somehow from a more fundamental one. It is rather that of a living thing, a tree, as I said, but more: a tree doing something that trees do not normally do, occasionally having the branches grow together and part again, in a kind of network.

The knowledge that is being increased in this extraordinary way is inherently and inevitably very specialized. It is different for the physicist, the astronomer, the biologist—there are many different kinds of biologists—the mathematician, the chemist. There are connections. There is this often important mutual relevance: even in physics, where we fight very hard to keep the different parts of our subject from flying apart, so that one fellow will know one thing and another fellow will know another and they will still be able to talk to each other; we do not entirely succeed if such communication fails in spite of a passion for unity which is very strong. The traditions of science are specialized traditions; this is their strength. Their strength is that they use the words, the machinery, the concepts, the theories, that fit their subjects; they are not encumbered by having to try to fit other sorts of things. It is the specialized traditions which give the enormous thrust and power to the scientific experience. This is one of the things which also makes the great problem of teaching and explaining the sciences. When we get to some very powerful general result which illuminates a large part of the world of nature, when at that time by virtue of being general in the logical sense, of encompassing an enormous amount of ex-

perience, just then in its concepts and in its terminology it is most highly specialized, almost unintelligible except to the men who have worked in the field. The great laws of physics today, which do not describe everything or we would be out of business, but which describe almost everything that is ever noticed in ordinary human experience about the physical world, cannot be formulated in terms that can reasonably be defined without a long period of schooling, of careful schooling; this is comparably true in other subjects.

One has then in these specializations the professional communities in the various sciences, who work closely together, know each other, know throughout the world who they are and on what they are working, always excited, usually pleased when one member of the community makes a discovery, sometimes jealous, but with very numerous and warm relations with each other, almost family relations, as far as the life of science goes within a community. I think, for instance, that what we now call "psychology" will some day be many sciences, that there will be many different specialized communities practising them, who will talk with one another but who, each in his own profession and in his own way, will have close colleagues who are really the people that in his intellectual life he lives with.

These specialized communities, these guilds, if you want, are a very moving experience for those who participate; there have been many temptations to build something on them or to see analogues in them in other human activities. The simplest, the one that we hear talked of a great deal, is this: if physicists can work together in countries with different cultures, in countries with different politics, in countries with different religions, even in countries which are politically at each other's throats, is not this a way to bring the world together? It is certainly one of the few things we know how to do. We certainly should do it; but it is, of course, a very fragile and limited way to bring the world together. I shall turn shortly now to the generalization of this that is called for by our times.

A second point is that the patterns, the habits of the sciences have, to some extent, because of the tricks of universities, also been applied or found themseves applied to other things, to philosophy, for instance, and to the arts: what one calls "technical philosophy," which is philosophy as a craft, philosophy for other philosophers, and art for the artists and the critics. To my mind, these are profound mis-

readings, even profound subversions of the true functions of philosophy and art, which are to address themselves to the general common human problem, not to everybody, but to anybody, and not to specialists.

As a final word on this account of structure and growth, it is clear that one is faced here with formidable problems of communication, of telling people about things, and of teaching. There is no escaping this. There is an immense job never done, never ending, of teaching on all levels in every sense of the word.

It has often been held that the great discoveries in science, coming into the lives of men, affect their attitudes toward their place in life, affect their views and their philosophy; there is surely some truth in this. I think the examples that we are all taught are Newton and Darwin. Newton is not a very good example, for when we look at him closely we are struck by the fact that in the sense of the Enlightenment, the sense of a coupling of faith in scientific progress and man's reason with a belief in political progress and the secularization of human life, Newton himself was in no way a Newtonian. His successors were.

There are, as I see it, two points. First, if discoveries in science are to have an honest effect on human thought and on culture, they have to be understandable. That is likely to be true only in the early period of a science, when it is talking about things which are not too remote from ordinary experience. Some of the great discoveries of this century go under the name of relativity and uncertainty, and when we hear of those, we think, well, this is the way I felt this morning: I was relatively confused and quite uncertain. But you do not have at all the notion of what technical points are involved in these great discoveries or what lessons.

I think that the reason why Darwin's discovery, Darwin's hypothesis, perhaps, had such an impact was, in part, because it was really a very simple thing in terms of ordinary life. We cannot talk about the contemporary discoveries in biology in ordinary language. We cannot talk about them by referring only to things that we have all experienced.

Thus I think that the great effects of the sciences in stimulating and in enriching philosophical life and cultural interest are neces-

sarily confined to the rather early times in the development of a science; but there is another requirement. I think that is a necessary condition, but that discoveries will really only resonate and change the thinking caps of men when they feed some hope, some need that pre-exists in the society. I think that the real sources of the Enlightenment, fed a little by the scientific events of the time, came in the rediscovery of the classics, of the classical political theory, perhaps most of all of the Stoics; I think that the hunger of the eighteenth century to believe in the power of reason, to wish to throw off authority, to wish to secularize, to take an optimistic view of man's condition, seized on Newton and his discoveries as an illustration of something which was already deeply believed in quite apart from the law of gravity and the laws of motion. I think that the hunger with which the nineteenth century seized on Darwin had very much to do with the increasing awareness of history and change, with the great desire to naturalize man, to put him into the world of nature, which pre-existed long before Darwin, and which made him welcome.

I have seen an example in this century where the great Danish physicist Niels Bohr found in the quantum theory, when it was developed thirty years ago, this remarkable trait: it is consistent with describing an atomic system only much less completely than we are used to describing large scale objects; we have a certain choice in which traits of the atomic system we wish to study and measure and which to let go; but we have not the option of doing them all. This situation, which we all recognize, excited in Bohr his old, old view of the human condition, which is that there are mutually exclusive ways of using our words, our minds, our souls, any one of which is open to us, but which cannot be combined: ways as different, for instance, as preparing to act and entering into an introspective search for the reasons for action. This discovery has not, I think, penetrated into the general cultural life; I wish that it had; it is a good example of something that would be relevant if only it could be understood.

Einstein once said that a physical theory was not determined by the facts of nature but was a free invention of the human mind. This raises very much the question how necessary is the content of

science, how much is it something that we are free not to find, how much is it something that could be otherwise? This is, of course, a very basic question in determining how we may use the word "objectivity," how we may use the word "truth." Do we, when we find something, "invent" it or "discover" it? The fact is, I think, just what one would guess. We are, of course, not individually, but in our tradition and in our practice and to a limited extent individually, free in deciding where to look at nature, and how to look at nature, what questions to put, with what instruments and with what purpose; but we are not the least bit free to settle what we find. Man must certainly be free to invent the idea of mass, as Newton did, as it has been refined and redefined over and over again; but having done so, we are not free to find that the mass of the light quantum or the neutrino is anything but zero. Men were free to discover and invent the idea of electric charge, a natural idea, but one that could have been missed; but having done so we are not free to doubt—we are free to doubt but we are forced to assert—that there are any of the building blocks of matter that have a charge other than that of the electron, or its opposite, or no charge at all. Other charges do not occur. So it is. We are free in the start of things. We are free as to how to go about it; but then the rock of what the world is really like shapes this freedom with the necessary answer. That is why ontological interpretations of the word "objective" have seemed useless, why we use the word to describe the clarity, the lack of ambiguity, the effectiveness of the way we can tell each other about what we have discovered or not discovered or found.

From all of this it is fairly clear that in the sciences, total statements like those that involve the word "all" with no qualifications are hardly ever likely to occur. In every investigation, in every extension of knowledge, we are involved in an action; in every action we are involved in a choice; and in every choice we are involved in a kind of loss, the loss of that we did not choose to do. We find this in the simplest situations. We find this in perception, where the possibility of perceiving is coextensive with our ignoring many things that are going on. We find it in speech, where the possibility of understandable speech lies in paying no attention to a great deal that is in the air, among the sound waves, in the general scene. Meaning is always attained at the cost of leaving things out. One finds it, of course, as a recurring theme of literature, in action. One finds it

in the idea of complementarity, in its sharpest form, where it is formally recognized that the attempt to make one sort of observation on an atomic system forecloses others. We have freedom of choice, but we have no escape from the fact that some things being done leave out others.

In practical terms, this means, of course, that our knowledge is finite and never all-encompassing. There is always much that we miss. There is always much that we cannot get hold of because the very act of learning, the very act of ordering, the very act of finding unity and meaning, the very power to talk about things means that we leave out a great deal.

I say this not at all in a mystical way, but factually, and with modesty. There is every reason to take pride in what has been learned about nature, and a little about ourselves; but there is a good deal of reason to remember that this is always done at the cost of losing information which was there to be had. Ask the question: would another civilization based on life on another planet very similar to ours in its ability to sustain life have the same physics? One has no idea whether they would have the same physics or not. One only knows that they would not find insoluble contradictions; they might be talking about quite different questions. This makes ours an open world, an open world without end. I had a friend in Berkeley, a Sanskritist, who used to say that if science were any good it should be much easier to be an educated man now than it was a generation ago. That is because he thought the world was closed.

The things that make us choose one set of questions, one branch of inquiry rather than another are, of course, embodied in the scientific traditions. In developed sciences each man has only a limited sense of freedom to shape or alter them; but they are not themselves wholly determined by the findings of science. They are largely of an aesthetic character. The words that we use, "simplicity," "elegance," "beauty," indicate that what we are groping for is not only more knowledge, but knowledge that has order and harmony in it; and, of course, like all poor fellows we hope for continuity with the past. We want to find something new but not something too new. It is when we fail in that, that the great discoveries follow. I should just as a warning say that the fact that something is simple, elegant, and beautiful does not mean that it is true. That is another matter.

Now all these points, the origin of science, the scientific age, its growth pattern, its branching reticular structure, its increasing alienation from the common understanding of man and from philosophical questions, its freedom, the character of its objectivity, and its openness, are somehow relevant to the relations of science and culture.

I am not here talking of the popular subject of mass culture. In talking of that, it seems to me one must be critical, but one must, above all, be human; one must not be a snob; one must be rather tolerant and almost loving. It is a new problem; one must not expect it to be solved with the methods of Periclean Athens. I do think that in the problems of mass culture and, above all, of the mass media, it is not primarily a question of the absence of excellence. I think that the worker, the modest worker, in Paris or Tokyo or Denver or New York has within reach probably better music and more good music, more good art, more good writing than his predecessors have ever had. It seems rather that the good things are lost in such a stream of poor things, that the noise level, as we say, is so high, that some of the conditions for appreciating excellence are not present. One does not eat well unless one is hungry; there is a certain frugality to the best cooking; and something of this sort is wrong with the mass media. But that is not now my problem.

Rather, I think loosely of what we may call the intellectual community—the artists, the philosophers, statesmen, teachers—maybe not all but most professions—critics, prophets, scientists. This is an open group, with no sharp lines separating those that think themselves of it. It is growing; it is a growing faction of all people. In it is vested the great duty for enlarging, preserving, and transmitting our knowledge, our skills, our understanding of interrelations, of importance, of priorities, of commitments, of ethical injunctions, of meanings, of relations, to help men deal with their joys and temptations and sorrows, their finiteness, their beauty. Some of this has to do, as the sciences so largely do, with propositional truth, with propositions which say "If you do so and so you will see," which have the kind of objectivity that permits them to be checked and cross-checked until, though it is always wise from time to time to doubt anything, there are ways to put an end to the doubt. This is how it is with the sciences. It is not all there is to the sciences, because of the aesthetic and human aspects of their history.

In this intellectual community there are other kinds of statements, which emphasize a theme rather than stating a fact. They may be statements of connectedness or relatedness or importance, or they may be in one way or another statements of commitment, committing oneself or expressing an agreed commitment. To them the word "certitude," which is a natural one to apply in the sciences, is not very sensible; depth, firmness, universality, perhaps more; but certitude, which applies really to verification, is not the great criterion in much of the work of a philosopher, in most of the work of a painter or a poet or a playwright. For these things are not, in the sense I have outlined, objective. Yet, for any true community, for any society worthy of the name, they must have an element of community, of being common, of being public, of being relevant and meaningful to man, not necessarily to everybody, but surely not just to specialists.

I have been much concerned that in this world of change and scientific growth we have so largely lost the ability to talk with one another. In the great succession of deep discoveries we have become removed from one another in our tradition, and even largely in language. We have had neither the time nor the ruggedness nor the skill to tell one another what we have learned, nor to listen properly, nor to see what there was that would increase and enrich our common culture and understanding. And so it is that the public sector of our lives, what we hold and have in common, has suffered, as have the illumination of the arts, the deepening of justice and virtue, and the ennobling of power and of our common discourse. We are less men for this. Never in man's history have the specialized traditions more flourished than today; we have our private beauties; but in those high undertakings where man derives strength and insight from public excellence, we have been impoverished. We hunger for nobility, the rare words and acts that harmonize simplicity with our truth. In this default I see some connection with the great unresolved public problems—survival, liberty, fraternity.

In this default I see the responsibility that the intellectual community has to history and to our fellows: a responsibility which is a necessary condition for remaking human institutions as they need to be remade today that there may be peace, that they may bear more fully those ethical commitments without which we cannot properly live as men.

This may mean for the intellectual community a very much greater effort than in the past. The community will grow, but I think that also the quality and the excellence of what we do must grow. I think, in fact, that with the growing wealth of the world and the possibility that it will not all be used to make new committees, there may indeed be some leisure, and that a high commitment on this leisure is that we reknit the discourse and the understanding between the members of the intellectual community.

In this I think we have, all of us, to preserve our competence in our own professions, or parts of professions, to preserve what we know intimately, to preserve our mastery. This is, in fact, our only anchor in honesty. We need also to be open to other and complementary activities, not intimidated by them and not contemptuous of them as so many are today of the natural and mathematical sciences. As a start, we must learn again, without contempt and with patience, to talk to one another; and we must learn to listen.

DELPHI

By STANLEY COOPERMAN

Come wait with me,
And hate with me,
And we shall dance in time
Beneath a spreading test-tube tree,
And sip a cup of lime.

For Pan shall skip,
And Pan shall trip
Beyond the blackened dales;
And Pan shall break his faery lip
On concrete nightingales.

Two poems

HAROLD WITT

WAXWINGS

Hungering in winter, from a distant air,
a momentary flock of waxwings came.
They settled softly on the crooked, bare
branches of an oak, and like their name
sleekly slid to where some berries hung.
Brownish grey, with breasts of subtle buff,
with bandit masks, with crests, with spots of crimson
those feathered thieves were beautiful and brief.
They perched and twittered on the leafless tree
and swooped again for berries, tail tips barred
with such bright yellow you can't hope to see
often in winter unless a startling bird,
fast as happiness, suddenly arrives
in lustrous plumage, and just as quickly flies.

CRUEL AVOCADO

The blunt fruit sliced,
pallid green inside
with a nut round seed,
diminishes my hand.

The luteshaped fruit
accompanies me back—
my mother strums its music,
knifing off the dark

rind that drops in scallops
when I am blond and ten—
and light is uneclipsed,
now is peeled to then,

a magic situation,
the child inside the man
sheds, in an inner kitchen,
chrysalis again.

Time's tomb reopens
the shining reel is shown,
antique, of timely children
when the dead were young—

my brother spinning airplanes,
my father from the sun,
my aproned mother humming,
all the gone at home—

cruel avocado,
raying through a lens
the light of vanished shadows,
touchless, as on screen.

The divided stream

JEANNIE OLIVE

Ma sent Bart Raincrow to fetch me at the settlement school. It was along about the middle of a Friday afternoon, and the fourth grade scholars were lined on the front benches for Miss Allie to hear their geography lesson. The rest of us had been put to adding columns in the workbook, but the truth was, I was too drowsy to think proper. The October sun warmed my back and I squirmed, seeking comfort on the wooden seat, biding time until the afternoon recess. A stray hornet droned about the room, lured by the scent of ripe apples in the children's desks, and the buzz of it blended with Miss Allie's sing-song voice. She was laying low the fourth graders, preaching her sermon on laziness.

"I've said it before and I'll say it again," she said with a galloping rhythm that made it sound like reciting a poem. "I can't make you work, but I can make you wish you *had* of."

I looked across the aisle to see what Toady was doing. Toady was Bart's boy and lived in our tenant cabin. He was too young to sit on my side of the room at school, but he wouldn't sit anywhere else. It took Bart and his wife Lowee and Grandpa and Ma and me all put together to get him to school in the first place. I'd promised Miss Allie to look after him if she's let him sit by me.

The hornet had lighted on the side of his desk and was crawling through the grillwork to his apple inside. There was a big bite gone. Toady couldn't wait for recess.

"Psst, Toady!" I whispered. I slid my foot across and tapped his ankle. His dark head turned, bead eyes questioned, but at that very moment Miss Allie stopped railing the fourth graders and stared point blank in our direction. I bent over my workbook but out of the tail of my eye I saw Toady's hand in his desk, feeling its way to the apple and hornet.

"Toady!" I called, too loud, but he was past helping anyway, for his hand had closed over the apple. He jumped, knocking his reader

to the floor, and Allie stalked toward us, waving the blackboard pointer.

"Now, some feisty-britches is fixing to get a dose of hickory tea," she threatened.

I wasn't scared of old Allie. I knew she'd never touch me, because of Grandpa. Folks weren't anxious to rile Will Baxter. She wouldn't whip Toady either, because he was a Cherokee. Indians stymied Allie nigh as much as they did Ma.

The whole room seized advantage. The fourth graders in front began to clown. A spitball spattered against the blackboard, and one of the big boys in the back stomped his feet. A little chap from the primer class leaned out the window. "They!" he piped. "Yonder comes Bart Raincrow!"

I forgot Miss Allie and turned to see. It was Bart all right. Anybody could see that by the way he streaked along, low-slung, covering the ground like a painter cat. Indians walked different from the rest of the settlement people, who shuffled along, loose-jointed. It was Bart, and it meant something was wrong at home. I feared Grandpa was worse.

"It's Grandpa," I said and began to stack my books. "I got to get home."

"Now Wilda," Miss Allie said, "you take your seat and wait. No use to jump to conclusions."

Toady was gathering up his things, too, with one hand only. His face was a peculiar color, and he had his left hand clenched tight. Already the fingers were beginning to swell.

Bart opened the door without knocking. Allie stepped forward, eyebrows raised, and her spectacles slid halfway down her beak. Bart said something to her, but I couldn't hear it over the racket the children were making. Then he turned and nodded in the direction of Toady and me. We picked up our books and stood, uncertain, until Allie finally found her tongue.

"Wilda is excused for the rest of the day," she told the class in a high unnatural voice. "Her grandfather's been sick."

The primer child piped up. "Old Mr. Baxter's bad off, my paw said. He's got the high blood."

Nothing was mentioned about excusing Toady, but he followed anyway. We cut sideways across the ball field, trying to keep up with Bart, but he was already past the clump of sourwood trees at

the edge of the schoolyard. When we got to the Turtlepond Road he was nowhere in sight.

I stopped to catch my breath and wait for Toady. Toady could usually keep up with his father's pace. With little hops and leaps he covered the distance, stayed close on Bart's heels. That's how he got his name. But he wasn't hopping today. He was tumbling along, half running, squeezing his left hand against his chest. Then I remembered about the hornet.

"Open up your fist," I told him. "Let me see."

He ignored me and began to run faster. His new overalls made a whistling noise as he shot past me and on down the road. Toady was odd that way. He'd soon die as grumble about a pain.

They were waiting for me on the swinging footbridge at Hiawassee Forks, the boundary of Grandpa's land. Before I could tell Bart about Toady's hornet sting, I saw he had already discovered it. He had taken out his wad of chewing tobacco and put it in Toady's hand. The swollen fingers curled around the cud, and little streams of amber oozed out between. But Toady's face looked better. It had gone back to its natural reddish copper color, same as Bart's and exactly the hue of the sourwood leaves since the first frost.

We sat on the bridge in silence, while I got my second wind.

"Well, what's happened?" I asked finally, seeing Bart wasn't going to speak first. "What about Grandpa?"

"Dead," he said, and then he was off again down the Turtlepond Road, with Toady, now recovered, hopping along at his heels.

The word rang in my head, yet I was unable to believe. I sat staring after them, addled, until they turned the bend and then I looked down into the swirling river. I fixed my eyes and gazed for a long time, until my head began to swim and I could feel the bridge moving dizzily along with me, upstream, past the forks and toward Nonotla, the house we lived in.

Always I'd figured it would take a thunderbolt the size of a millstone to finish off Grandpa when his time came. Might be it was because of what Ma said once when he was having it out with a team of stubborn mules that took it into their heads not to go in the barn door. Ma and I stood watching from the back porch, through a blinding rain. Ma was terrified of storms. She was flattened against the wall, whitefaced, undecided whether to go inside the house or stay out until Grandpa came. We watched and listened to his

curses ringing through the air like crackles of thunder. The snap of his whip echoed from Cowee Gap to the Cove below.

"Them mules is liable to haul off and kick his brains out," I said. "He's old enough to know better than to stand behind a mule."

Ma's face was drawn with worry. "It's not the mules that fret me," she said. "It's the wicked words. Field hands can hear him clear across the river. 'Old Cussing Will' they call him."

Grandpa was a champion cussing man. It made my ears burn to hear. He could keep at it to kingdom come and never call the same word twice.

"One day the good Lord is going to strike him dead with a bolt of lightning," Ma went on. "Maybe strike the house and kill us all."

I considered her words and decided it was true the most likely thing to cause Grandpa's end. The part about the house I never believed, though. I didn't figure the Lord would take it out on Ma and me. Besides, to say the truth, I never thought that the Lord above nor the Devil below nor any living body in between could touch our house.

Nonotla was a Cherokee word, meaning "the divided stream." Bart Raincrow told me that had always been the name of the place, even before Grandpa came to make the clearing and build the house. He said the Indians named it that because of the forking of the Hiawassee River in the Cove. It had surprised me to hear. It was hard for me to picture in my mind any such place, let alone a name place, before Grandpa's time.

Before Bart told me, I reckoned the name came from the water Grandpa had piped into the house from a reservoir he built up top of Ravensford. There wasn't a man the country around that knew the first thing about plumbing in those days, but that never stopped Grandpa. He allowed he could do it himself. He always thought he knew how to do anything, while the truth was he didn't always figure things out right. He didn't figure it out right about those water pipes, because none of the faucets in the house could be turned off. If anybody from the outside forgot and turned them, then the water backed up and the reservoir overflowed. A mighty stream would come down on us from the cliffs above. Grandpa wouldn't have it fixed, though, not even after a plumber man settled nearby in Greenville. Grandpa thought his own work was best. He laid great store by anything that was his.

So in Nonotla there was always the sound of running water, and the people around clicked their tongues in wonderment. The house was a thing of curiosity throughout the settlement, but few had the chance to see inside. Grandpa was a man remote. He believed in keeping to himself. He was almost as much of a hermit man as Uncle Enloe, whom I'd seldom laid eyes on. Ma longed for company, but she was not the boss of things.

I idled along the ridge path, dreading to get home. Red and yellow leaves dropped about me, soft as a spring shower, and I thought of the song ballit Tam Bowland used to sing.

> The rain is falling, rain is falling,
> I wonder where you are tonight.

No word had come from the Bowlands since they moved away from our tenant house to the cloth mills of Gastonia. They had a girl my age and closer to me than blood kin. I still ached with the loss of Elfie and longed to have her with me now. She could always figure out a way to make a bad thing seem better.

I thought of the time last winter when the school was closed because of bad weather. Elfie was at my house, teaching me how to do a clog dance. We were in the parlor room and it was snowing outside. Generally Elfie and I didn't play inside the house. Grandpa hated any noise not of his own making. After a while he came in with his hands over his ears, shouting for some peace and quiet. He sat us down on straight chairs facing the clock on the mantle.

"I'll give a penny to see you two wiggletails sit quiet for one minute," he said. "Like to see you get some thoughts in your heads for once. Takes still water to run deep."

"A penny each?" Elfie asked. "Or one split betwixt?"

"One cent, I said," Grandpa repeated, taking out his watch. "One Indian head copper."

"Reckon we could buy us a horehound stick and break it in two," Elfie said, ready with a cheerful thought.

I boiled inside. I perched on the edge of my chair and stared at the second hand on the mantle clock. It crept around like a snail and I felt my cheeks burn, thinking of Grandpa trying to bribe us

both with a single penny. He was the biggest cattle grower in the county. Everything he touched turned to money. I decided he'd not buy me for a stinking cent, nor Elfie either.

I sat frozen until just the very second before the hand on the clock finished its circle. Then I opened my mouth, sucked in air and let out the wildest war whoop I could. Elfie nearly fell backwards in her chair, and Grandpa dropped his watch on the floor. He was madder than a wet hen.

"All right, God-damn-it, you've had your choice!" he bellowed. "But I'll tell you one thing. You just let me hear one more peep out of you this afternoon!" He stomped out.

"I'm sorry about the candy," I told Elfie. But she was bent double laughing, rolling on the floor. "This here sight was worth a heap more than a stick of horehound candy," she said.

But we stayed quiet the rest of the afternoon.

Toady met me at the clearing near the house. "Where you been?" he asked, his bead eyes blinking. "I done been to your house and seen the corpse."

My knees went weaky and I sat down on a log. I had never seen a dead human being and feared Ma would make me look.

"I don't want to see," I said. "I can't stand to look."

"Shoot!" Toady scoffed. "Nothing to be afeared of. I've seed a plenty of corpses in my time. Last year I had a sister borned dead."

A wave of sorrow came over me. "A dead baby would be the saddest sight in the world to see," I said.

"Hit wasn't the worst," Toady said. "The worst sight ever I seen was my Uncle Brady. He got drunk and froze to death over on Black Rock. They never found him for three days and by then the polecats had done eat his face off."

"Shut up!" I screamed. Shiver bumps rippled my back. "Shut your mouth!"

Toady's face twitched as though I'd slapped him. I left him perched on the end of the log and started on to the house. But I wanted somebody with me. I turned around.

"Want to come along?" He shook his head.

"Why not, if you're so all-fired brave?"

"Nothing to see now," he said. "They've done put the coins over his eyeballs."

News traveled fast in our settlement. By the next morning a host of people had gathered at our house, and more coming up the path, though the funeral was not to be before late afternoon. They stood about in groups on the front porch, talking among themselves. They milled about the yard, trampling Ma's wild flower beds, peered in the windows. Whole families there were, everybody and his brother, some I'd never even seen before. I eyed them from my upstairs bedroom and thought that if Grandpa could see such a sight, he would die all over again.

I crept down the back stairs to the kitchen, feeling queer inside. Bart's wife Lowee stood over the stove. She had come to help Ma. She turned and smiled at me, and her eyes were gentle as a fawn's.

"Where's Ma?" I said. "They's folks out there I never laid eyes on."

"Miss Bird's talking to some of them." Lowee's voice matched her eyes, soft and far away. "She said for you to put on your dark blue jumper and fix up nice."

I perched on the side of the woodbox behind the stove.

"And she said for you to keep a watch on the water faucets, see that strangers don't tamper with the plumbing."

The odor of spice cake seeped from the oven. The smell of it made my stomach sick, yet I was unwilling to leave Lowee. There was something about her that made me feel more peaceful.

"Your Uncle Enloe came last night."

"I know it," I said, "but I don't know why." Uncle Enloe and Grandpa never got along. He left home at eighteen and had hardly set foot in the house since.

"Enloe hated Grandpa. Why did he come?"

"Like Mr. Will always said, blood's thicker than water. Folks don't hate their paw, not when it comes right down to it."

Uncle Enloe was a bookish man. He lived by himself up on Hanging Dog Creek and taught in the settlement school there. It was said that Enloe liked books better than human beings.

"You ain't looked at your Grandpa yet," Lowee said.

"No."

My head felt hot inside and little glimmer streaks danced around my left eye. My hands and feet were dampy cold, and I hunched closer to the stove.

"You could go now—before they's so many crowding about."

"Directly," I said. "Not now." I just wanted to sit there and ponder for a while, listen to Lowee's voice and the water running in the sink. But talk drifted in from the room beyond. I recognized Miss Allie's voice and wondered why she was not at school. Then it came to me it was Saturday. Only one day had passed since yesterday.

"No, Bird's upstairs with her brother. She can't hear you," the sing-song voice said. And then, "They say that Enloe is a right clever man. "I'd like to make his acquaintance."

"Well, hit's the truth what I said, anyway, and everybody knows it." I knew that voice, too. It belonged to Bessie Renfro, the church singer. It had a silvery tone.

"Many's the time I've heared it said that Will Baxter's the stingiest man ever breathed. Biggest tightwad in Cherokee County."

Lowee crossed the room, silent as a shadow, and shut the kitchen door. I sat there on the woodbox and thought about Grandpa being stingy.

Grandpa had given land for the school and money to built it, too, though Ma once said he did it in the hopes of keeping Enloe home. That wasn't free giving. For the life of me I couldn't think of anything else he had given to anybody. And then it came back to me about Pumpkin Pie.

Likely it was the first tangle I ever had with Grandpa. I was five and Elfie gave me a tabby kitten. It was a sickly thing and I nursed it day and night. Ma said I handled it too much, and Grandpa wouldn't allow it in the house. I generally managed to sneak it into my bed, but one evening I left it on Grandpa's padded rocker on the porch. Grandpa came along after supper and plopped right down on it without looking. He was big as a bear and weighed a ton. The sight of that kitten drove me wild. I moped for days, and then Grandpa gave me a new-born bull calf. I named him Pumpkin Pie because of his color, and I got to be as foolish about that calf as I was about the kitten. But now I couldn't remember whatever happened to him.

The door clicked and Ma came in with Uncle Enloe. He was a puny little man, bald on top and no taller than Ma. He looked

better than I remembered, though. He was all dressed up in a town suit and had a more pleasant look about the mouth. Ma looked awful. She had on a black dress she must have kept since my own pa died. Just from the sight of it I vowed never to wear black. Her face was ashy gray except for her nose, which stood out bright as a fire pink. She went straight to the stove and looked in the oven. The odor of spice billowed out. My stomach moved sideways.

"Ma," I said, "what happened to Pumpkin Pie after he grew up?"

Ma jumped and the oven door slammed. "Heavens, Wilda, you've made me ruin the cake! What you doing hiding back there?"

"Trying to think what become of my pet calf," I said. "I want to know if Grandpa sold him to the beef man."

Enloe laughed. "Now, he'd not do a thing like that," he said. "Not unless he was offered cash money."

Lowee had turned her back but I could tell she was listening.

"He didn't, did he, Ma?"

"Goodness sake, Wilda, didn't *what?*"

"Sell Pumpkin Pie."

"Now, how in the world would I know? You get upstairs and dress. You look a sight."

"I don't feel so good," I said.

The kitchen door opened again and this time it was old Bessie Renfro, with her child Carcie May hanging on to her skirt.

"Now, Miz Bird," she said to Ma, "I sure don't want to intrude myself at a time like this, but I thought I'd offer to sing a song for Mr. Will's funeral."

"I'm thirsty," Carcie May complained, eyeing the faucet. "I want me a piped-in drink of water."

"Lord sakes," Bessie said with a silvery laugh. "This here little old rascal has been pestering the life out of me to see your piped-in spring water."

But I noticed that Bessie took a good long look for herself.

"I declare to goodness," she said. "Sounds like they's a waterfall in here, don't it? But I reckon you'uns have got used to it."

"It's nice of you to offer to sing," Ma said uncertainly.

"I got two numbers already worked up," Bessie said, " 'Old Ship of Zion' and 'There is a Fountain Filled with Blood.' Take your pick or I'm willing to do both."

I hopped off my perch. "We don't plan to have songs at the

funeral," I said. "Grandpa never liked church singing."

"*Wilda!*" Ma's voice carried a threat but I aimed to have my say.

"Only kind of music Grandpa liked is old time fiddling. We ought to ask Tam Bowland to come back."

Uncle Enloe laughed. "I think so too," he said. "Maybe we could get Tam to play 'Gold Mine in the Sky.' That would suit your grandpa best."

Ma's face set. "You get upstairs this minute," she said, taking it out on me. "What on earth are people going to think of this family!" From the back stairs I heard her say, "Wilda's not herself."

"Don't know as anybody expects her to be," Bessie said. "Law, ain't she the spitting image of Mr. Will."

That's what folks always said about me when my hair needed combing or my temper flared. After I'd put on the blue jumper, I wet my head and smoothed it down slick as a doorknob.

I started slowly toward Grandpa's room, but there were strange people crowding around his door.

"Natural looking a corpse as ever I seed," I heard a man say. "Dog if he don't look like he might come a-climbing out of that box any minute and commence to cussing us all out!"

"I aim to see that toilet room," another one said. "I've heared it's nigh too pretty for a body to set on."

I ran down the back stairs to the kitchen. "Where's Ma now?" I said to Lowee. "It's time we got rid of this trifling bunch. They're no friends of Grandpa's. If Ma don't show them the road, I will!"

"Miss Bird don't want hard feelings," Lowee said, "and you don't want to make her feel more dolesome than she already does." She put her hand on my shoulder and I felt my anger draining away. "Why don't you go out and play with Toady?"

"I'm sick," I complained. "My stomach don't feel so good and my head's busting open."

Lowee gave me a dose of baking soda and sent me out to find Toady. He was in the high meadow chasing insects. Toady ate grasshoppers, popped them raw into his mouth, alive and kicking. I looked away, unwilling to see.

"Go to the house if you're hungry," I said. "Tell Lowee to give you some cake." But at the very mention of food I gagged.

"I'm staying away from that crowd of peeping toms," he said,

"and I'm sick of the sight of old Miss Allie chasing your Uncle Enloe. Makes me want to puke."

"Ma said women used to chase Enloe a sight," I said, wondering why. "He don't even nibble the bait. She'll not get him."

"Anyway, I got better things to do," Toady said. He pulled a white cardboard pillbox from his pocket and held it out. "Nine hornet prisoners I've already trapped," he boasted. "One more to catch. I aim to make them suffer, ten to one. I'll pull their wings off."

Suddenly the feeling I'd had all day balled itself inside me. My stomach knotted. I ran for the house, my hand over my mouth, pushed through the mob unheeding. When I reached the bathroom I found the door open and Carcie May Renfro peering about inside. I grabbed her by the collar, shoved her out, and latched the door. I made it just in time.

That afternoon Lowee sat beside my bed. She held my hand and put wet cloths on my throbbing head. Ma came in from time to time and gave me some pink pills the doctor left for me.

"Lowee, I think I'll give her a sleeping pill before the funeral," she said once, exactly as if I weren't there to hear.

The thought terrified me. "I won't take it," I said. "I'll go to sleep when I'm good and ready. I want you and Lowee to stay here and talk to me."

"Now, Wilda, you're making it harder for the rest of us," Ma said. "I can't stay here and you know it. There's a house full of people downstairs. A body has to be civil, put up a decent front, that's the important thing. Take this pill."

I hopped up, angered and insulted. "You could at least tell me what happened to Grandpa!" I fairly shouted. "I want to know if he was struck dead like you said he'd be. And I want to know what happened to my calf Pumpkin Pie!"

Ma looked ready to jump out of her skin. Her eyes darted nervously to the open window, then to the door. She held out the pill on a trembling hand.

"I won't take it!"

"Now, swallow it," Lowee coaxed. And I did. With Lowee's

beautiful face smiling close to me, I would have swallowed a bucket of nails to please.

When Ma left, Lowee talked for a little while. "The Lord never struck down your grandpa," she said. "He died sudden, of heart failure. Hit's the best way to go."

"Was he a sinful man, Lowee? Was he a mean tightwad?"

"Now, Mr. Will wasn't much of a giving man," she said, "but I've seen a heap meaner. And he never sold your yellow calf. I asked Bart. He said it was in the upper pasture. Said he seen it not more than a week ago, finest bull ever he saw, stomping around up there with a big ring in his nose."

The pain in my head was beginning to ease, and a strange heaviness settled over me. "Find Toady," I said through curious stiff-feeling lips. "He's got some hornets in a box."

"I know. I've already made him turn them loose."

I lay back against the pillow, and Lowee put a fresh wet cloth over my eyes.

Then it seemed I was walking the ridge path to Ravensford. Elfie tripped along ahead of me, and now and then she would turn around and beckon me on. She wore a lacy dress and her face was fair as a china doll. "Don't leave me," I called. "I'm coming!" But the ridge path became steep and turned into a rocky ledge. There was barely room for a toehold, but I inched along as fast as I could.

Then I turned a bend, and somehow it was not Elfie at all but Grandpa in front of me. He was walking far ahead, but slowly, with a cane. I knew I had to hurry, I had to see him before it was too late, but the ledge grew more narrow all the time. "Grandpa!" I called. "Come back! Let me see, let me see!"

He turned around. I reached out to him, but then suddenly I looked up and saw that he had no face at all. I stepped backward and fell down through black space.

I awoke crying and shivering. The sheet was damp with perspiration and the taste of salt tears was strong in my mouth. Lowee was gone. I felt a great emptiness in the room and all over the house. There was a peculiar kind of silence, too, that grew thicker and thicker, even though I could hear a man's voice begin to talk in the parlor below. I sat up, trying to think what was wrong.

Then the door to my room burst open and Ma came tearing in, frantic.

"Quick—the water faucets!" she said. "Some fool took it on himself to to turn off all the faucets! If I hadn't caught it in time, we'd of been washed away before the finish of the funeral!"

She dashed into my bathroom. Then I heard her at the basin at the end of the hall, from there her footsteps tapping down the back stairs to the kitchen.

I lay back again, feeling dizzy and weak but comforted by the familiar sound of running water. It filled some of the emptiness and drowned out all the voices in the parlor. At least I didn't have to listen to Bessie Renfro sing.

THOREAU

By R. E. Sebenthall

These plain gray sentences, gritty as the paths
that belted Walden, tough and brambled
as berry vines slowly strangling old stumps,
lean as loon-laugh trailing across slate skies,
track truth through the same underbrush as ours
and, pouncing, blaze out like sumac in October.

Important crocuses may still lurk under the swamp leaves
you lifted once to look—
but nobody walks in the woods anymore.

The profound perch
hauled from your upside-down sky
flash as fresh-caught now as then;
but here in our steel Babylons
we are embarrassed by
these hoecakes and pond fish
our country cousin sends.

Three poems

JEROME L. MAZZARO

THE BURNING BUSH

Out in the Sunday dust our throats go drier,
yelling the red cape from the bull's quick push.
Then we relax and our blood, taking fire
from crowds about us, crackles like a bush.

For this is Mexico where living thirsts
in all the wild consuming signs of death.
And here the thought of horn and marrow bursts
the silences where spreading crowds take breath.

In the hotel across the darkened streets,
our flesh pours efforts to remake in one
the two selves cleaving tensely in the sheets
at midnight and the fingerings of dawn.

Now home, I buy a print that calls the lie
to fear and death, the bull's horn caught like gall
in Manolete's side, and life spilled wry
out of the wound into the anguished fall.

Tonight we thresh again these places where
we had our crossing in that morning's heat,
looking for signs of miracles in air
to catch the tinder where two bodies meet.

Ulysses' seven bulls, caught in such fire,
brought back negations he had made to death.
We only catch another, briar to briar,
burning the rooms about us with our breath.

BROTHER TO MARS

Put up no monument, but let the winds
in grasses sound his innocence, and place
hydrangea in clusters on his grave.
He was your brother. He was brave.
Your kinship binds you to a single face.
He needs no other tending but the winds.

He rode the waves at Guam, first casualty
of that beachhead, his bashed face in the sand.
At home he took you to the picture shows
or taught you baseball. His furloughs
like his forearms took your wildness in hand
to teach you patience, hugged against his clothes.
You never understood his casualty.

Hearing, you shied our arms for your locked room
and slid his photograph inside a drawer,
then left his uncompleted letter mussed
to hug your desk, defiant as the dust;
and would not go to movies about war,
becoming silent as his empty room.

The church was silence, belled against his bier.
Old buddies preached a homily of praise
beside the flag-draped coffin yards from you
while you roved distant in the closest pew.
Their speeches could not penetrate your haze
nor comments stir you from your childish view
that would not know the bones inside the bier.

Then like an inning's change, you grew to love
the stringy girl who floated through your walls.
Walking with you to school, she held your side,
teasing the wildness you strove to hide
with gestures of her love. We watched from halls
her awkward forms, your growing ease of love.

Coldly you struck All Souls Day and his grave
to chance a look; standing a moment hushed,
you found the painted cross without a mar,
wanting no elegance, and said your prayer.
Your private monument to him is crushed?
Erect no other. He is no god of war.
His playfields are the oceans of the grave.

XANTHOUS

Souring the yellow clay,
The river moves sly rattlers through a brush,
Quick, violent in the spring,
Unleashing whip-like its full diamond force.

And so it came last week,
Piling its yellow clay along our farms,
Knocking our barns askew
And stinging the already broken backs.

Repairs come slower, hard.
One short week's swelling takes a year to fix.
We fix it, too, with paint
And hammer, knowing it will swell again.

That's all we know to do.
The calm and yellow of the winding bed,
Lying so peaceful there,
Is cold like skins to cure our fevers by.

How to fight communism

JAN S. PRYBYLA

To anyone who in the last ten years has kept his eyes wide open and who has managed to retain a firm grip on wishful thinking and self-delusion, it must be apparent that the Western world has suffered a series of reverses and defeats at the hands of international communism and that the process of Western roll-back in territory, influence, and prestige has not been checked. The theory of "containment" has gone the way of the various slogans that referred to a tough, dynamic, anti-communist policy which would allegedly roll the communist wave back a little, if not all the way to its starting point. Since then there have been North Korea, North Vietnam, Tibet, Cuba, and Laos.

Yet these more obvious examples of communist successes tell only part of the story. Russian and Chinese technicians, teachers, traders, and advisers of all kinds are busy in many of the newly independent countries of Asia, Africa, and the Middle East; the Monroe Doctrine is showing signs of serious wear and tear; the spectacular achievements of Soviet science and the no less important advances of Soviet industry are beginning to exert the kind of magnetic attraction throughout the world that once belonged to the United States. From the Western standpoint all this is disconcerting enough. What is more dangerous, however, is the confusion and disarray which the communist successes seem to have thrown into the Western camp: although as yet, at least in the United States, there is little evidence of a loss of heart, most people—from the policy-makers down—seem to be at a loss as to what to do next. The Western world begins to give the impression of an army well trained in conventional warfare that is being harassed and whittled away by an omnipresent guerrilla. In some instances it is showing signs of losing its nerve, hitting out blindly at great moral cost to itself.

The time is certainly ripe for some hard thinking on the nature of the communist threat and on the methods and purposes of com-

batting it. In the pages which follow a number of guideposts on this road of reflection are offered: they do not pretend to be exhaustive; some may seem debatable. All of them, however, are necessary if the present confusion is to be turned into an effective front against the rising tide of communism.

Know thine enemy

There is no short cut in the matter of standing up to the communist threat. What is needed first is a thorough knowledge of the meaning of communism and of the forces behind it. Unfortunately this aspect of the problem has been neglected in the West and its place has been taken by glib and uninformed loose talk about the more spectacular, emotionally striking, but thin and superficial features of communism. The Russians and the Chinese, on the other hand, have made quite sure to put a comprehensive if distorted knowledge of the West in the forefront of their educational process. It is often forgotten that the bulk of Marxist teaching concerns not the building of communism but the criticism of the capitalist system. The communist is imbued from his youth with a mechanistic but controversially potent and effective knowledge of the capitalist process and of its "superstructure" of political, moral, and legal ideas. With minor updating modifications he is able to apply this knowledge to the whole non-communist world.

With few exceptions the knowledge of communism among the masses in the West is woefully deficient. This is all the more inexcusable since the raw materials of such knowledge are at hand in the form of innumerable, thorough sources on communist philosophy, objectives, policy, and tactics. Totalitarian systems have at all times revealed a strong propensity to commit such things to writing. Yet there seems to be a feeling over much of the West that all this had best be left to the experts, that it is not politic to fill the minds of the young—and the not so young—with matters which are "bad for them," and that those who do so should perhaps be watched with suspicion. With astonishing frequency one meets today with graduate students on the threshold of a Ph.D. in the social sciences whose acquaintance with the works of Marx and Lenin or with the processes of the Soviet economy rivals that of a dropout from a country grade school. There is even a feeling among those who should know

better that such subjects as the history of economic thought can be taught without intellectual impoverishment by skipping the "rumblings off stage" of Marx and the socialists. When over a third of the world's population is daily exposed to a modern version of such rumblings, it is surely time to re-examine this attitude. With apologies for stressing the obvious, one may justifiably recall in this connection the attitude of the democratic West towards Hitler's *Mein Kampf*.

It is necessary, however, to emphasize the need not only to learn about communism and the communist apparatus as embodied in the state power of China and of the Soviet Union but to learn about it from the horse's mouth. Here again, the West has up till now elected a costly short cut. Such knowledge of communism as can be detected among a minority of educated people springs largely from someone's description and interpretation of what the pontiffs of Marxism-Leninism-Stalinism have said and from handbooks on the Soviet economy. Although such indirect approaches to the problem may be necessary, they are by no means sufficient. Such narrowness is, moreover, inexcusable in view of the wealth of original material easily available to anyone who takes time off to reach out for it on the library shelf.

The awareness of the elementary fact that third-hand knowledge of a subject is something of an intellectual fraud, and that in addition it may not pay, is beginning to filter down into the fields of engineering and nuclear physics, although even here the Western student's acquaintance with Soviet literature is well behind the Soviet's acquaintance with Western technical and professional journals. In the fields of economics, political science, sociology, and related disciplines, matters in the West appear still to be in the hands of a specialized few. When the chips are down, there is a tendency to appeal to home-bred authorities on Soviet agriculture, industry, law, and literature, while Soviet publications after considerable dust-gathering find their way into the archives. In some measure this problem is generated by the language barrier—although good translations are available. The gravity of the communist threat, however, should encourage some serious thinking on the priorities to be attached to language training.

To a considerable extent the reluctance to delve into the sources of communist thought and power is due to that particular variety of

complacency which for some years has been actively encouraged by the educational system itself. There is a noxious idea about that in order to do something well it must be "fun" to do it: there is "shopping fun," "listening fun," and "learning fun." Unfortunately the struggle against communism is not fun, nor for that matter is the reading of Marx in the original. One may perhaps be allowed the conjecture that the stress on learning through fun is not without some relation to the deficiency of first-hand knowledge in the teacher.

A related danger, and one about which more will be said later, consists in another intellectual short cut usually justified on the ground of lack of time. It would appear that a considerable number of high school and college students consider the pen (and by extension, the mind) as an instrument for ticking off canned true-and-false platitudes. Whatever the merits of the so-called "objective" approach to learning, one permanently pernicious result seems to emerge: complex and often contradictory concepts, shades of meaning, and the delicate interplay of a multitude of forces in social life are lost and their place is taken by sharply-defined, shallow, black-and-white half-truths. The opposite of capitalism is socialism; a dual economy is a mixture of capitalism and socialism; capitalism is good, socialism is bad; Nehru is a neutralist; Salazar is a colonialist; Sukarno if not neutralist is anti-Western; Tito is a communist but sometimes pro-Western; Castro is both communist and anti-Western, and so it goes. It has been, so it seems, one of the heritages of free man to view a problem in its rich manifestations, to examine it from all possible standpoints, and to couch tentative conclusions in literate prose. To lump together ideas and historical experiences, in yes-and-no categories, to stick on such pseudo-knowledge a few worn out labels, is not only to desert the patient work of ages, but in the present alignment of world forces it is to go far on the road to defeat.

Finally, the study of communism in all its forms must be a continuing process and not a once-and-for-all shot. Communism is a living, evolving organism; its unchangeable features though significant are, in fact, relatively few in number and rather broad in scope. One is reminded in this connection of the monotonous regularity with which opponents of communism have charged the communists with inconsistency, with saying one thing today and

holding on to the opposite tomorrow. Even an elementary knowledge of the method of dialectical materialism and a sustained observation of communist policy over the years would have been ample to show that the charge of inconsistency is likely to be taken as a compliment by the communists.

A continuous study of communist theory and tactics, a study that should not remain the exclusive property of a selected, specialized few, would long ago have shown that world communism in the nineteen-sixties is a far cry from the communism of Stalin. In the sixties world communism will increasingly be based on the economic power and influence of the world's second largest industrial state. With such backing the old and less satisfactory method of direct military aggression will tend to recede into the background since more effective and subtle methods of penetration will do the job of empire building better.

It is true that in the nineteen-forties the countries which fell to communism did so through the presence on their territory of Soviet armies which, in turn, backed puppet regimes artificially concocted in Moscow. Such methods, however, were too obviously aggressive and tended to create in the outside world an image of the Soviet Union that generated opposition to further expansion. Also the principal drawback of such methods was that they implied the backing of unpopular minorities and involved naked force and openly alien domination. To some extent the Chinese policy today reflects a lag in communist expansionist drive, but this is so because at the moment all that China can offer is an overwhelming military force.

Since Korea, however, Soviet policy and thought had turned away from such earlier and cruder methods of foreign conquest. Neither Cuba nor Laos—in spite of appearances to the contrary—is an example of direct and substantial Soviet military backing. They are, on the contrary, vivid samples of the new Soviet approach, which consists essentially in backing politically and economically internal forces of discontent and teaching these forces how to organize for effective action and how to rally popular support. Neither Batista nor the ruling regime in Laos had the backing of the people: the royal Laotian army had no heart in the fight, and the Cuban landless peasant eventually turned to Castro and tipped the balance in his favor.

In such a context the military intervention of the West is a phenomenon of an era which in the fast-moving political scene must certainly look archaic and which, moreover, squares badly with the professed aims of Western democracy.

Know thy neighbor and thyself

These reflections lead directly to the second important item in the reappraisal of the communist threat. Whatever their shortcomings—and they are many—the communists know clearly what they want, what they are fighting for: in short they know their communism. They are also beginning to know the aspirations, moods, traditions, and reactions of the peoples whose allegiance they are seeking as a preliminary to their absorption into the communist system. On both counts the Western nations are again deficient.

There is to be discerned throughout the Western world a growing preoccupation with last things first and a waning of interest in the political and social bases of democracy. There is also to be found a lack of understanding of the popular forces, traditions, and aspirations—not to speak of languages—in countries where the per capita income is less than $400 a year. It is surely a mistake to try to promote in the world the American, British, or French "way of life" when one is not even sure what the essential ingredients of that way are, even on the assumption—which itself calls for careful review—that what is good for the U.S.A., Britain, or France is also good for India, Pakistan, and the Mali Federation.

One aspect of this problem deserves special mention. There is in this country a widespread misconception about the nature of the American economic system and about its relation to the more fundamental and enduring aspects of the political system of democracy. It is generally held that the American economic system is "capitalist" and that capitalism is somehow indissolubly linked to political democracy. Thus, many people in perfectly good faith use the terms "capitalism" and "democracy" as interchangeable concepts. This, of course, is an illusion and another instance of the mental short cuts and the "objective" approach to knowledge criticized above. For one thing, were it true, there would be no democratic country left outside the United States since not many

would be prepared to argue that, to cite but two examples, either Britain or Sweden fit the definition of "capitalism."

Capitalism if it has any meaning at all is essentially a way of doing the economic job of resource allocation. Theoretically, at least, it implies the diffusion of decision-making power in the economic field and the protection by society of certain complex institutions, which include private property, inheritance, competition among numerous relatively small units, and the profit motive. Each of these, however, contains within itself elements which if left unchecked could reflect adversely on political democracy and social justice, a fact recognized in the United States but ignored in a number of Latin American countries. In addition, the capitalist process may under certain circumstances generate a set of values inimical to the development of plain living and high thinking.

The capitalist way of doing the economic job is not the only way consistent with political democracy nor in certain circumstances is it the most practical way. It is in fact a good guess that the American type of "capitalism" may not take root in many of the underdeveloped countries presently seeking solution to their socio-economic problems. The danger here is that the pedestrian confusion between "capitalism" and "democracy" may lead to the support of political forces abroad which, while making a show of goodwill towards foreign investors, will take little heed of the urgent demands of their own people. To remove the argument from the field of immediate controversy, one may cite the experience of France in Algeria: the pumping of staggering sums of private and public capital into Algeria, the construction of power dams, airfields, oil wells, and highways, the development of estates, have not filtered down to the masses; nor have they even begun to solve the problem of poverty and social inequality; nor have they answered the outcry for political self-determination. It is dangerous to cry "wolf" whenever a country decides to nationalize an industry or elects to break up landed estates: there is a variety of socialist democracies as there is of totalitarian socialisms. What is lacking, and lacking seriously, is a knowledge and understanding of the richness and variety of ways in which non-capitalist economic systems can be combined with political and social democracy. It would be unfortunate if all that the West had to offer to the newly emerging nations of the world was the philosophy of a stockholders' report.

Another aspect of the "know thy neighbor and thyself"problem concerns the delicate question of leadership and prestige. In recent years this has become an obsession in this country at least. There is much talk about the loss of prestige and about the need to be the leader of the free world, but as yet there are few signs of a serious analysis of the meaning of both concepts. It would seem that the essential quality of a good leader is the respect and support which he receives from the led. He need not, it may be added, have their love. The need to be loved is indeed an admirable quality in the individual so long as it does not degenerate into weakness through an attempt to please all and sundry. It need hardly be pointed out that the British are not particularly cherished in India, Ghana, Nigeria or for that matter in any of the countries on which they have left a lasting imprint. They are, however, respected—grudgingly perhaps—and with more than a suggestion of resentment, but the underlying respect manifests itself in the preservation of important aspects of British democracy and in the acceptance of much of the British cultural tradition.

In many of the countries of Eastern Europe, the Russians are neither loved nor respected and in this sense their hold on these territories is still precarious. The difficulty is that leadership in international affairs is not a matter of mere will or decision; it is an organic process of growth and maturity. Ultimately it demands competence, political awareness, strength tempered with humility, and an ability to add to the cultural storehouse of those who are to be led. Back-slapping enthusiasm and exuberant good will are not enough and sometimes tend to be regarded as naiveté and bad breeding in stratified, old societies. It may be argued that these are superficial matters of form, but form tends to be exceedingly important among peoples whose only capital is good manners, pride, and an agile mind.

There is also content. It is not a mystery that an opulent society exerts a strong pull on some of its best elements, a kind of upside-down professional Gresham's Law whereby the bad coin is driven outwards, abroad. This is unfortunate for everyone concerned and it may be disastrous for the reputation of the country which seeks leadership. Hasty and uninformed recruitment for key jobs abroad is part of the story, but it is not all: it is not merely a matter of an alleged expert not being an expert in his chosen field, but also of

an expert being nothing but that. For years the educational system has striven to make the student adjust to his environment in the narrow sense of the type of society which he finds immediately around him. Although there is something to be said for this, the process seems to have been pushed to the point where the subject is unable to adjust to any but his own society. With all the talk about individuality and personality development, the trend has been towards standardization of tastes and attitudes which may indeed fit in with the needs of a mass consumption market but does not help one in responding to the exigencies of foreign service. Hence the need to break with the insularity and provincialism of training which does not spell, as some have maintained, the abandonment of all that is best in one's own society.

Leadership and prestige seen from abroad tend to be evaluated on two main counts; the wisdom of a nation's "official" foreign policy and the wisdom, competence, tact, discretion, and day-to-day conduct of that nation's individual representatives abroad. In the former field, face-losing situations are sometimes unnecessarily created. Where a widespread rebellion is on foot and the forces of nationalism press irresistibly, it is folly to hang onto the legal fiction that Algeria is administratively and in other ways an integral part of France. Where a sovereign country's very existence depends on her fisheries, it is unwise to insist that a twelve-mile limit is a matter of life and death to Great Britain. It is, therefore, important to sift carefully the issues and to distinguish between the vital and the phoney. It is not true that the national interest is hurt where a sectional interest feels the pinch. We should be far from the day when what was good for General Motors was good for the country too. Where individuals are concerned it may fairly be said that any overt attempt at or even implication of mixing in the internal affairs of the host country on the grounds of trying to save the nation from communism will be resented and will defeat its purpose. Discretion is the better part of leadership.

New Trails in Thought

Communism breeds not only on poverty, social injustice, corruption, and popular discontent, but also and perhaps more significantly on mental inertia. In many parts of the non-communist world these

conditions are the cancer of liberty and unless eliminated will inevitably produce a Cuban-type situation. It is one of the tragedies of the free world that on more than one occasion it has maneuvered itself into a situation where what needed to be done was left for the communists to do. On other occasions genuine, non-communist movements of social reform have been branded as communist whenever they attempted to dislodge entrenched interests. That this could have happened is clear evidence of a lack of imagination and boldness in thought that is quite incompatible with the Western heritage.

It is the West that in the past was the source of and the driving force behind mankind's most progressive and revolutionary ideas. From Greece through Rome and the Enlightenment to the American and French revolutions, the West gave the world new ideas and new means of achieving them. It believed in progress, it elated and stimulated men's minds. Today it seems to have lost its momentum especially, and most unfortunately, in precisely the spot where most of the West's economic power is located. Inventiveness, ingenuity, intellectual agility are increasingly channelled into a never-ending multiplication of newer, shallower, more useless material gadgetry, into the sprouting up of new and increasingly meaningless forms of leisure, and into the glorification of the superficial. In the sphere of ideas there is a gradual but marked movement in the direction of bucolic conservatism: there is a growing fear of change, a reluctance to experiment with new ideas, a desire for soft-treading and mental security. It is symptomatic of this climate that a twenty-year-old student at a great university should preface an address to his classmates on the social and economic problems of the underdeveloped countries with the words: "I am not a communist nor ever have been a communist." At times this fear of intellectual challenge, this mental timidity, this abandonment of the traditionally Western mental dynamism turns to panic, and panic in turn breeds more rigidity.

What much of the world is seeking today is not only food and shelter but new, bold paths towards new forms of social organization, new ways of running the economy, new intellectual experiences. If suggestions on these vital issues do not emanate from the West, they will most certainly come from elsewhere. World leadership and the respect of the world cannot be gained with a paucity of ideas nor

with the fear of ideas. One example of what is meant will perhaps illustrate the situation. It is perfectly true that the popular vote and the freedom of people to express their approval of or dissent from their rulers is one of the fundamental and most cherished heritages of the Western democracies. Yet this very freedom is often advanced in a thoughtless and mechanistic manner, out of context with the economic, social, and educational reality of a given people. What significance has the ballot in a country in which 98 percent of the population is illiterate and has been kept illiterate election after election? This most important freedom is quite obviously impaired and turned into mockery when year after year, generation after generation, the mass of the population is given nothing but the right to vote. In fact, where chronic poverty, ignorance, and social oppression reign supreme, the popular ballot may become the means of committing national hari-kari by swinging into power men who promise to remove the former at the cost of the latter. Social and political democracy are indissoluble, and to insist on one while ignoring the other merely throws discredit on what is fundamentally sound and imperative.

Communism must and can be vanquished, but to achieve this laudable objective it is first necessary to eliminate bungling which is rooted in the ignorance of communism and of Western potentials. It will require all the efforts, wisdom, energy, tact, understanding, and competence that the West can muster. It will call for the best not the second best in Western society. It is a tall order, but one which must be executed at the peril of Western decline.

WILL IT BE SILENT, THEN?

By Judy Klare

Will it be silent, then, after that gargantuan death?
The atomic Armageddon no one will see
(Unless some Planner sits behind some Space-to-Be).
When wise old relativity gives breath
To a new sure-of-itself astronomy?

When a tired moon no longer insists
Its crocus mosaic through our fog-night,
Just as we in blind spillings of thought and might
No longer tempt our mortality as it exists,
And desire has compressed to anthracite,

When circleness is not the heart of the matter
And roundness is not the only physics in love
And when, planet for planet, we shatter—
No years left, no dust, no conversation, no systems of—
Then, will white silence spread from once was "above"?

And, mythology, will it, too, be stilled?
Will Orion never again get out of bed
On winter nights to pace his forest of air; unwed,
Unloved, but no longer calcified in a trap he helped build?
Those ever-loving Pleiades will be gently dead.

In the midst of that uncounted quiet, it seems,
Surely some small audibility will appear—
A bit of saucy sibilance echoing all our blasphemes—
Or the merest whisper, reverberating down the planisphere,
The spinning of all those winding-sheets for our galaxy of dreams.

Humor in music

ALBERT SEAY

In collecting my thoughts on such a subject as "Humor in Music," my original design was not to discuss such a broad question as this but rather the Renaissance. In fact, I had originally begun a short paper under the rather grandiose title, "The Use of Certain Musical Instruments as Symbols with Obscene Connotations in the Music of the French Chanson of the Early French Renaissance." Such a title seems to hold most of a paper in itself, with little additional explanation necessary. I may add that my basic inspiration came from a most fascinating article on the significance of the bagpipe in Chaucer appearing in a recent issue of *Speculum*, the journal of the Medieval Academy of America.

In spite of the intriguing character of my original idea, one that would have been most interesting to explore, particularly with musical illustrations, I began to realize that humor of any kind in music, let alone this particular variety, is, in actuality, a most difficult problem for both composer and audience, something that cannot be said to be easily composed or comprehended. For this reason, I spent some time in thinking over just how this matter of fun in sound could be studied and if, by so doing, it might help others to see some of the humor, conscious or not, that nearly all great composers and a large number of the not-so-great have managed to incorporate into their works. That Haydn, Mozart, Beethoven, and Wagner, to name only a few, have achieved a certain kind of humor, I suppose, is about as well known as the names of the composers themselves. That others, Bizet, Tschaikowsky, Hindemith, and Stravinsky, have managed the same kind of thing from time to time is, so it seems, not quite as obvious.

Why is it that music has problems in being funny, other than in the lowest of ways by making funny and disconcerting noises on instruments? Perhaps it may clarify some of our difficulties if we begin by recognizing certain basic ideas about music itself. With those in mind, we may then understand just how humor has been expressed

in music by various means. With all of this out of the way, we hope to suggest some of the fundamental problems of humor and its relations to tone, with a few of the ways in which humor can be enjoyed when a composer has felt in the mood to work a bit with this aspect of his art.

Music has its own approaches to the question of art, for it is, in reality, two arts in one: first, the art of arrangements of sound, and second, the art of arrangements of these sounds in time. Unlike other arts, music has little or no relationship to the world about us and speaks a language, if I may use such a term, that has no counterpart or use in real life. Our literary arts use as their starting point words, which are employed by all of us in communication with no idea of artfulness implied; literature generally is an ennoblement of the daily, the usual, the common. The same is also true of our so-called visual arts, for here there is always the reference to representation of something that is already known in one way or another to us from the world of nature.

Some may wish to argue this point, but it is the departure of modern day artists from this norm that causes the anguished cry from so many that there is no art any more. Even so, the basic shapes employed by even the most non-representational artists of our time do have connections with reality, curves, for example, holding connotations of femininity and straight lines of masculinity. The shock troops of Madison Avenue have long known this, for their advertisements show that they have learned these implications far too well for the peace and comfort of the average citizen.

Music, fortunately or unfortunately, has none of these connotations upon which to rely. One may try the claim that we do hear bird-songs that are music, but it should be pointed out that bird-songs do not have structure nor do they have anything like the formalism that we are accustomed to think of as one of the major attributes of music—their art, in other words, is one of sound but not one of arrangements of these sounds in time. We might also point out that music is supposed to require intelligence; the term "bird-brain" does not seem to belong here. Others may claim that we have sound about us all the time, but I must persist in my view that this is not the important thing, that the true difference lies in the arrangement of these sounds in time.

In thinking over the place of music and its relationship to the

other arts, fine or not so fine, one is relentlessly forced to the conclusion that music is the supreme abstract of art, for its very sources are already abstract. Sound, in itself, has little meaning and musical sounds have even less. We, of course, do attach significance to certain sounds, for example, the noon whistle at the local factory, a sound which we recognize as meaning that it is now time for lunch and that our stomachs need a bit of filling, about the same reaction that Pavlov managed to get out of his dogs. The reaction, however, is not part of the sound intrinsically, for we would get the same pleasant sensation if the factory changed to a siren or economized by whanging a triangle.

Musical sound is organization and this implies that the organizer is working to put his music together in some form of logic. Since he has nothing in nature to turn to for an example other than such a simple level that he will almost automatically discard it, he has built up over the centuries monumental forms of one kind and another based exclusively on a form of logic that, at its best, is perhaps nearest that of mathematicians working with symbols.

This position is one that today owes much of its popularity to the work of Suzanne Langer, whose whole thesis is that music is an arbitrary arrangement of symbols in sound, meaning little or nothing in terms of actuality and governed by logical rules which, in themselves, likewise have nothing to do with actuality. Her point may be illustrated with the question, "Is there anything in nature to which we might compare the sonata-allegro form?" The evident answer is no. I hasten to add that most art forms have no correspondence with nature, but their primary source, their building material, is most natural, organized into non-natural forms. Music is not natural to begin with.

Turning to the subject at long last, the question of humor in music, it becomes obvious that humor in music is going to be a much more difficult matter than humor in the other arts, because humor is a product of being natural, not a special sophisticated something that has to be taught. A child laughs naturally, not because he has been taught to. An adult laughs because he sees something, hears something, or thinks about something that isn't quite in accord with the everyday or the expected everyday. Why do we laugh at a comic strip, that is, at some comic strips, since some aren't so comic anymore? We laugh because it reveals a new way of look-

ing at our naturalness. Why will we enjoy a great comedian? Because he exaggerates certain aspects of our own nature to such an extent that we see the innate ridiculousness of our own humanity.

It is, for this reason, that most humor in music is not associated with music at all, but with those other arts which have been combined with music somehow. Note here that I have said, "most," for there is, as we shall see, humor in music which does not rely upon outside assistance for its comprehension. In spite of this, our lowest level of musical humor is the result, not so much of music, as of the other art that is combined with it. This may happen in many ways, both consciously and unconsciously, for composers may use the sister art with full awareness of comic possibilities or may be so swept up by their genius that they remain completely oblivious to any humorous overtones that may be present.

The most easily comprehended type of humor in music is not musical at all, but stems from the words that go with the music. All too easily this kind of thing may occur without malice aforethought, as witness the wild hilarity at almost any performance of a nineteenth-century "mellerdrammer," with wronged innocence as the theme of the heroine's aria before the sneering villain all but wrecks her life. Or recall the now deserved oblivion of such a recital favorite of our fathers (and mothers) as, "There are fairies at the bottom of my garden," whose final line, defining the protagonist of such an ambiguous observation, can today arouse no pleased sigh of recognition. (Does anyone today remember Kenny Baker's magnificent baritone performance of this minor classic in a long-forgotten movie? His only rival in this area was Beatrice Lillie.)

I need not enumerate all the examples of this unconscious word-humor, for most of us can supply them without too much difficulty. Off-hand, Weber, Wagner, and Verdi, to name only three of our more important composers, have given us all too many occasions to regret that we have understood exactly what the singers were saying, particularly since the music at such points has done nothing that could possibly be construed as funny. Who can forget those glowing words, "This is no man!" Poor Brunhilde.

Conscious efforts, of course, are many, but here again the reliance is upon the point of the story getting over to us by means of the words sung or given us in advance as a program that will be followed. A very good case in point is the recent pair of records put out to

perpetuate the Hoffnung Music Festivals in England, now to be held no more because of the death of their founder. The latest one includes a lovely series of hypotheses, all based on how certain composers would have adjusted themselves to the demands of the singing commercial, the sales message of a British equivalent of Ovaltine, "Bourne-Vita." The composers represented include Bach, Mozart, Verdi, Stravinsky, and Schoenberg. The point is that one would not laugh if there were no words, since the imitations, musically speaking, are perfect. Only the text makes the joke.

One other example of this kind of thing should suffice, the celebrated *Façade* music of Sir William Walton. Written originally to be performed with words bellowed through a megaphone sticking through a curtain behind a small orchestra, Walton's work was later revised, allowing the music to be performed without this most valuable adjunct. I have played for an unlettered listener the "Popular Song" and received the remark, "It isn't bad music to listen to; it is just like *Nola.*" The joke is missed without the words.

About the only way that music can help in this kind of humor is by a certain kind of onomatopoeia, more or less trying to suggest something natural that will go with the words. We all know the old business of bass singers who go down in that cellar or sing of frogs that croak in the night. Here, I cannot feel that we are speaking of music as an art, but as a method of representing something in nature that, in reality, has little or nothing to do with music. If we are to hear sheep, as we are supposed to in Strauss's *Don Quixote*, it would seem somewhat ridiculous to use 110 musicians when real sheep are so cheap. Perhaps the trouble lies in that sheep somehow or other can't be taught how to pick up a cue.

Music in combination with the visual, however, is often quite humorous. Remembering the old days of vaudeville, I cannot repress my childish conviction that the trousers of every comedian in the United States contained a hidden cymbal, one that became invisible in the next act, when the blonde dancer came on to kick it steadily throughout her turn. The movies, as soon as they became vocal, found that music would help here in exactly the same way, with strange sounds accompanying the even stranger actions on the screen. Who can forget the noises, and I use the word advisedly, that accompanied all the Disney movies? Who would have thought that that grand combination which appeared so heroically as symbols

of the American Revolution, that noble piper and his aspirin-needing drummer friend, would ever find further employment as the musical introduction to the heroics of Laurel and Hardy? Why do we thrill at one and laugh at the other? (I make no specific attributions, but leave this to you.)

Perhaps the supreme example of this duality is the all too well-known *Sorcerer's Apprentice* of Paul Dukas. We all laugh when we hear the slightly humorous sounds of the three bassoons introducing the broom and the poor slave to that broom. We giggle politely when the subterranean tones of the contrabassoon announce the phrenetic work of the halves of the broom in their water-boy role. Yet, this is the same instrument that can strike such foreboding in our hearts when used by Verdi in the third act of *Aïda,* in the scene by the Nile, when Aïda remembers her duties to her native Ethiopia, or it can be so sad for Tschaikowsky, as in the opening of the *Pathétique.* From whence then, comes our bemused reaction to the contrabassoon as used by Dukas? The answer would seem that we have been told that this thing is certain to be funny and why. Without the advance warning, it seems quite probable that we would listen to Dukas's masterpiece with about as serious a mien as its contrapuntal contents and thematic developments would require.

Let us turn to ballet for a moment, for here is where we can find the clearest example. It is perfectly possible to see *Swan Lake* and swoon in ecstasy over the beauty and grace of the solo dancers. It is equally possible to find dancers who can butcher this thing so artfully that we cannot help but roll in the aisles. Nevertheless, the music is exactly the same and with exactly the same degree of beauty in both cases. About the only way that we could change the music to help would be to add a few of those vaudeville cymbal crashes mentioned earlier—not a particularly musical addition, but noisy and outside the realm of music. Ponchielli's *Dance of the Hours* wasn't funny until Disney gave us *Fantasia.*

It does seem that when we have humor in a situation in which music has been combined with another art, it is the other art that carries the onerous task of getting the joke over. Even when the music of the French Renaissance is played without the words, I defy the listener not warned in advance to tell whether or not the chanson is funny or sentimental. The music has nothing to do with it. One may also suggest, though not the basic subject of this

article, that there is no such thing as a difference between secular and sacred music. There is a difference between secular and sacred words that go to this music, which, alas, lead to connotations for the music.

Is there then such a thing as musical humor, humor that does not depend for its effect upon the admixture of a foreign art, one based on foreign principles? I think that we must all admit that there is, but it is an unnatural humor, depending for its effect upon a complete understanding of the logical and unnatural bases of music in an unnatural symbolism. Such humor is a reserved one, esoteric in character and one not comprehended or enjoyed without a strong musical background. For this reason and for others, to be discussed later, purely musical humor is a tenuous thing, delicate and often impossible of communication without preparation.

The simplest form of purely musical humor is the idea of misquotation, incongruity in placement of the well-known. But without adequate knowledge of the original, where the statement occurs and what its function is in its original placement, one cannot appreciate the joke. At its most uncomplicated, this kind of fun appears in Saint-Saëns' well-known *Carnival of the Animals*, presented most obviously in that movement where the string basses perform so touchingly Berlioz' "Dance of the Sylphs." We also may include the not too well-known two sets of quadrilles for piano four-hands, the first by Chabrier, the second by Fauré and Messager. What makes these funny is that both are built on themes by Richard Wagner, the first set on ideas from *Tristan*, the second on material from the *Ring*. On a similar level is Debussy's quotation from *Tristan* in his "Golliwog's Cakewalk," even though, curiously enough, Berg's quotation of the same work in his *Lyric Suite* evokes no smiles.

What seems to be behind the fun in all this, since misquotation is not always funny on purpose, as we have seen? I need only cite Strauss's series of quotations of his own work in his *Heldenleben*, which bring in no bit of humor save perhaps a wry grin at the man's egotism. Thus the answer seems to lie not in the misquotation of melody alone but in the medium. Saint-Saëns' use of Berlioz' masterpiece is funny because the orchestration and the tempo have completely perverted the original feel of the model. The aesthetic effect has been reversed. In a similar way, Chabrier, Fauré, and Messager have done a superlative job on poor Richard, for Wagner's

artistic intent in *Tristan* and the *Ring* has nothing to do with dance music, and his grandiose orchestra sounds somewhat anemic when reduced to the more modest proportions of four hands at one piano. Obviously, we compare the original and its intent with what has become the new objective.

The peak of this kind of nonsense was reached in the second Hoffnung Festival, mentioned above, where a condensed version of Tschaikowsky's "Finale" from the *Fourth Symphony* and his *1812 Overture* were performed by the Dolmetsch Society of Ancient Instruments, recorders, gambas, harpsichord, and, to help out in the climaxes, a cap-pistol. The recording of the Festival performance should be in the collections of all serious musicians, for it will ease their stony paths.

Such misquotation need not be confined to this simple level, for the fulmination of humor can be made easier and more evident by combining the work of one composer with that of another. When the two (or more) different composers come from different times, different areas, and have different goals, the fun is at its best. When a classically-minded trumpet player inserts a short phrase from *Petrouchka* in the middle of a hot chorus on "Tea for Two," the panic button has been pushed. On a slightly higher level, Frederick Stock in his days with the Chicago Symphony supplied one of the better examples of this kind of thing when he did an arrangement of Paganini's *Perpetual Motion* for his entire violin section. What made it so ridiculous was Stock's utilization of all the motives from Beethoven's *Eroica* for the orchestral background. The success of this arrangement can only be compared with that of Red Ingle on the same composition. Maestro Ingle managed to place the violinist against the background of a hill-billy band direct from Nashville and the Grand Ole Opry.

We might leave the misquotation in its various aspects with one final example, not intended to be funny, but one that has certain elements of humor. The reference is to George Szell's arrangement of Smetana's string-quartet *Aus mein Leben* for modern orchestra. This may not be too funny to many people, but I find myself grinning throughout the work, for the orchestration of Richard Strauss does not go well with the thematic ideas of Bedrich Smetana. This is higher level amusement, perhaps, but not too distant from hear-

ing "The Ride of the Valkyries" arranged for string quartet and 81 mm. mortar.

A slightly higher step up from the deliberate misquotation is the absorption of a composer's style to the point of identity. The magnificent "Bourne-Vita" commercials done at the Hoffnung Festival have already been mentioned as a supreme example of this kind of approach. I should, however, be remiss if I did not include the equally fine set of satires that have been done by Alfredo Casella and Maurice Ravel, under the title, "In the style of . . ." For piano solo, these pieces imitate neatly the work of such greats as Brahms, Debussy, Wagner, Strauss, and Ravel himself, this last done by Casella. The highlight of the collection is Ravel's extremely witty satire on how Chabrier would have written the "Flower Song" from Gounod's *Faust*. Casella, too, has neatly ticked off Strauss in his "Symphonia Molestica," where the opening theme (to be played with the help of a third hand) has too many resemblances to the opening of *Heldenleben* to be coincidental.

You will note that I have passed over the often feeble witticisms of Alec Templeton and Victor Borge in charitable silence. These things, although cute, are not designed for the musician, even though Templeton, before going commercial, was capable of some of the most biting satire ever written. His early album for Gramophone Shop contained an awesome example of German Lieder, based on the trenchant words *Ich weisse nicht die Wörte*. This type of satire has been perfected in our own day by Anna Russell, whose *Songbook* should be on the shelves of all of us as a reminder not to take ourselves too seriously. Here is an artist.

Most of this kind of humor can be pretty well detected, if not laughed at, by the average concert goer who remembers a bit of what he has heard and who can manage to read the program notes before the lights go dim. There is a third level which requires much more than the mere admonition that a certain passage is funny, but takes a thorough knowledge of procedures and what could be called the normalities of musical logic. As one might well expect, this type of humor is that seen in the great composers, the kind that is all too frequently overlooked by those who do not understand the historical assumptions made at each musical epoch.

The great masters of this kind of fun were Haydn and Beethoven, both adept at the special sophisticated joke, understood only by the

connoisseur and neglected by the masses. Haydn, for example, often had a good time by suggesting the incongruous, not only the non-musically incongruous, but even the musically. We all know of the many places where Haydn gives bagpipe imitations, chicken-cluckings, and the like. Not too many, however, notice the humor in such a work as the "Finale" to his 98th symphony, where what one expects and has a right to expect never happens. This movement, one of Haydn's most humorous, begins its development by setting up about as strongly as any composer ever set up any key, that of B-flat. The dominant seventh is literally pounded to death, double forte and with a long fermata. Does Haydn go to B-flat? Of course not. He takes a short break in the continuity of sound and then neatly takes off in G-flat, about as far away from B-flat as he can get and still have any audience left. This type of thing happens about four times, with the listener continually trying to build a new hypothesis as to where the Good Father is headed and never succeeding in out-guessing him. To the uneducated, it isn't funny, for one must know what should happen to appreciate the fact that it doesn't.

A similar case can be noticed in Beethoven's *Eighth Symphony,* which, to use a modern term, is loaded with "belly-laughs." Again, a knowledge of the proper procedure is needed. In the first movement, Beethoven knows and you know that the second key area is supposed to be C major. So Beethoven goes into the second key area in A-flat, only getting to C, where he should have been all along, by one of his most devious modulations. The same thing occurs in the recapitulation, just to drive home the point. Parenthetically, the Romantics didn't see the joke, for all they got out of it was that Beethoven had pointed out that the second key system of a statement didn't have to be in a closely related key. I may note here the unhappy results this occasionally has led to in the symphonies of, for example, Robert Schumann, where we have to spend three and four codas getting the original key set up again.

In the other movements of this same Beethoven symphony, there are many other examples of humor of this sophisticated type, all depending on a thorough knowledge of the historical situation for their fullest appreciation. The insertion of the out-of-place C-sharp, for instance, which occurs in the last movement and the final use of that C-sharp to take the work into D, a really foreign key, is

typical of Beethoven's keen appreciation and understanding of what creates humor in music.

Any article on humor in music cannot neglect Mozart's most charming contribution to the genre, his *Musical Joke*. This can be listened to by the musically untrained as a not-too-humorous business, with slight chuckles at the wrong notes in the horns. The musically literate, however, will enjoy the less evident fun, with frowns at the intrusion of the slapstick by these same horns, much as though a Peter Arno cartoon were to include without warning characters from L'il Abner.

Again, we must emphasize the matter of depth of musical training, for Mozart's point is the description of how a bad composer would try to write a large work, complete with fugues, developments, and all the paraphernalia of the significant composer. That he doesn't have talent, inspiration, knowledge, understanding, or inventiveness is the totality of the joke, for every bar shows the ineptness of the musical mind in back of the work. I cannot take the space to point up all the features of this piece that lie beneath the surface, for there are too many. I shall, however, single out the humor of the fugue in the final movement, a fugue whose subject runs out of gas at the third bar and whose countersubject cannot be recalled without thinking of our own desperate struggles in Theory III.

There are not many works like this, alas, for this is a most rarefied atmosphere. I can, however, recall one other that provoked shouts of laughter among a group of musicologist friends one evening at a Collegium Musicum. It was a textless work found in the fifteenth century manuscript, Bologna, Q 17, prefaced by the one word in all three voices, "Cecus," or "Blindman." This work, rather lengthy by the way, showed much of the quiet, determined futility found in the Mozart composition. Scales going up and down, up and down, form the substance of the three voices, with an occasional cadence giving a moment's pause before the next round of scales, going up and down, up and down. In the middle, lacking anything else to do, our anonymous composer introduces in the tenor, with tenths in the outer voices, the motive C-D, C-D-E, C-D-E-F, C-D-E-F-G, C-D-E-F-G-A, all in semibreves, with a breve rest between each appearance of what we must, for lack of another word, call his theme.

Would that this were all! We do it all over again, but starting on F now and with no rest between fresh starts. I must admit, however, that he does manage this time to make the whole scale from F to F as a fitting climax, even though the piece is far from finished. There is even a "broken record" area brought in, with one of the most peculiar series of hiccough-like bits of counter-point ever seen. I cannot believe that the composer, whoever he may have been, did all of this seriously, for it is just too inept. It is, without doubt, one of the earliest pieces of subtle musical humor ever written, humor which depends on knowing the laws of music and the methods of music, nothing more.

There are, I am sure, many other works that can lay claim to being purely musical humor which I have failed to mention, ones at whose omission you possibly have wondered. I have, however, confined myself to only those few which would serve to prove something of my basic point, that there are many examples of humor in music which cannot be understood as being humorous without a solid grounding in the stylistic characteristics of music history, both past and present. Like any profession, like any art, we do have our own jokes and our own particular bits of nonsense, but, to get the fullest enjoyment, we have to know more, to have heard more, and to have understood more.

Here is where we as musicologists can do much to interest more people in what pleasure music can give. We must, to be sure, take most of what we do as serious, for we are working with a serious art, one that, because of its inherent distance from nature, will always have its difficulties in making itself understood. Yet, it does seem that we can do more towards pointing out to our students and others that this art is not all heaven-storming, that it is not all sublime, that some of it is a bit ridiculous and a bit laughable, that it is fun. Music has been created by humans, and because of its creators, it has the capabilities of underscoring their humanity. We are right to teach the greatness of music and its composers. Can we not do a bit more for the humor of music and its creators as well?

THE RIDE

By LARRY RUBIN

It's great fun, child.
You ride with your mother in a long black car
So smooth you never feel the wheels
And all the way you follow that golden wagon
And all the people watch, and motorcycles glinting
in the sun
And the uniforms and you go through all the lights:
Like being in a big parade—only better: you don't
get tired;
You sit in the softest cushioned seat and look out
the window
And back, back at the line of cars (laugh at them,
Riding in broad daylight with their lights on, but
That's part of the fun), playing follow the leader
In the sunlight as the ty slides away and then
The country miles, green and no more people;
And so, swiftly, there you are
In a little toy city, all of stone.
Oh
It's great fun, child.
Only: you must hold your mother, after, at the edge:
Hold her, hold her, child. Don't let her leap.

QUINTESSENCE

By David Cornel DeJong

Not to speak ill of the half-dead,
not to proselyte the unborn and
unmarried, nor believe in a scripture
which foretells calumny or
to salute the casualties of others.

Not to be married to the most
troubled wife and beget panther cubs
of furry children, to keep the flag
at half-mast when either victories
or disasters besiege or threaten.

Nor yet be wooden-gaited and well
devoid of a chore of diversions when
a new band of roosters starts crowing
of yet another betrayal and a fiftieth
Christ is once more crucified.

Nor wet the fingers for a further
turn of pages, or even recognize
that an empty attic implies a new
resurrection for the mind to orbit
around and about yet another existence.

The mature student

SAMUEL B. GOULD

It is a dangerous undertaking these days to discuss intellectual life at all. As a nation we seem more and more determined to place intellectualism and subversiveness hand in hand. Any deviation from the patterns of the past, any statement of challenge to the *status quo*, any critical remark, and one finds himself accused of giving aid and comfort to the enemy. It seems impossible to convince some people (all too many people) that one can love his country deeply, be proud of its history and achievements, be ready to give his life for it, and still be critical when it falls short of its ideals or its promise. Nothing short of blindness is demanded, and we must keep repeating to ourselves that we are the greatest of all possible people in the best of all possible worlds.

Yet in our hearts we know that we must give our very life blood, if necessary, to protect the completeness of the freedom by which a university flourishes and achieves excellence. We cannot have excellence if everyone is expected to think as everyone else does, to act as everyone else does, and never to challenge anyone or anything. If students accept every idea with docility during their formative years, they will be sheep-like as adults. Show me the university or, indeed, the community where no unpopular idea can find opportunity for utterance, where the *status quo* can never be challenged, and I will show you a place where excellence in its true meaning has been sublimated to a condition of mediocrity.

We cannot emphasize too often these days the necessity for complete and absolute academic freedom for the scholar and a similar sense of freedom for the lay citizen. We live in a time when the clash of ideologies has shaken the foundations of our constitutional beliefs insisted upon and defended so fiercely by Jefferson and his contemporaries as well as by many statesmen of modern times. Every decade has brought forth crises that challenge these beliefs, that tempt us, perhaps in the interests of temporary peace of mind, to relinquish a small portion of our freedom to believe or to discuss

or to explore. Ultraliberals and arch-reactionaries alike, representing opposite poles of political and social philosophy, steadily test our willingness to adhere to the fundamental principles of the Bill of Rights. It does not matter that some aspects of the philosophies of these people may be repugnant to us as individuals. Under such circumstances we cannot afford to forget that the denial of even a small part of this freedom to any person ultimately threatens the freedom of all of us. The taking away of the tiniest portion of that freedom is a potential danger to the whole. The entering wedge that abrogrates freedom even slightly soon causes a larger and larger fissure into which the democratic process tumbles and where it disappears. If we believe in excellence, we cannot and must not permit any corrosion of the spirit of inquiry as a value in the free world and most particularly in America.

In examining our plight in somewhat lighter vein, Bruce Bliven, whose credentials as an intellectual are unimpeachable, offers an answer to the question, "Why are intellectuals distrusted?" He presents certain clear characteristics of the true highbrow, as follows:

> The members of this group hate the phonograph, unless you call it hi-fi, when they adore it. They won't listen to AM radio, but are devoted to FM. They never look at television, but they are sure that if they did, they would despise it. They don't go to the movies, but somehow they have managed to see the animated cartoon, *Gerald McBoing-Boing*, and loved it. (A generation ago, they were fond of Charlie Chaplin's films—"But only the early ones, mind you.") They never look at comic strips, but they enjoy Walt Kelly's *Pogo* and hate *Little Orphan Annie*. Their taste in art is highly selective; they prefer a genuine etching by a man they admire to a color reproduction, no matter how good, of an oil or watercolor by the same artist. They join no book clubs, participate in no Great Books study classes, and rarely look at any magazine with a circulation of more than 10,000. It is not true that members of this group confine their reading to Kafka and Kierkegaard, but if an admired esoteric writer with a small public finally succeeds in breaking through to mass sales, down go the thumbs . . . . Just now it is fashionable for the male highbrow to wear a small beard, but as soon as this idea has been taken up by enough people, the cognoscenti will shave.

Seriously or facetiously, the fact that our students are faced now with the ever-present danger of becoming intellectuals or our teachers are inevitably categorized as a species of mentally active and

therefore dangerous individuals should cause us to take some notice of why we bother to fight for the continued existence of educational institutions in this country in view of the sinister reputations they are prone to acquire. Thus I should like to consider the questions of why the University exists, and how, as it develops the attributes of maturity in its students, it simultaneously matures as an institution.

To put the matter simply and frankly in regard to the first question, we are concerned about the existence of the university because it is the major bastion against ignorance and the wellspring of ideas by which civilization progresses. In a democratic society we are committed to the belief that a university should be free and untrammeled in its explorations and that the shadow of thought control should never touch it. Adherence to this principle is the best guarantee we have of the preservation and nurture of our democratic ideals.

In its purposes and programs a university is a combination of the timeless and timely. The timeless elements, deeply rooted in the liberal arts and humanities, achieve fruition through a dynamic perpetuation of the classical tradition and through the firm retention of those aspects of learning that are linked to the identification and strengthening of humane values. The timely elements reflect the impacts of contemporary society and the necessity for preparing youth to meet the urgencies of human need, both present and future, whether philosophical, social, scientific, or technological. They reflect also the constant and ever-pressing demand that man's knowledge be increased, and that freedom in the search for truth be zealously guarded.

A university motivated to such action and dedicated to such principles is a priceless attribute of our society. All of us, whether teachers or students or lay citizens, should never forget what a power for good is here represented, and therefore how essential it is that we champion its continuation enthusiastically. The first lesson of a student is to learn and learn well the nature of the institution to which he belongs. He cannot help thereafter but be proud of his membership in the university and eager to mature under its tutelage.

This brings us to the second question which I should like to examine much more fully.

The essence of maturity can be identified in a statement of Justice Oliver Wendell Holmes. He said, "I think that, as life is action and passion, it is required of a man that he should share the passion and action of his time at peril of being judged not to have lived." It seems to me that the task of a faculty and its responsibility to students is to prepare them soundly for such sharing of the passion and action of our time and to place them squarely in the midst of both even while they are students. A university education is not merely preparation for life; it is life itself. And in the process of learning we must embrace life with its promise, its dangers, its occasional horrors, its wonder and mystery, its exhilaration, and, above all, its lesson of the continuity of man's development.

We should remember that even though students in colleges and universities of this land are counted in the millions, they still represent less than 2 percent of the population at any one time. They are therefore the selected, and ultimately the educated, core of our society and our hope for leadership in all aspects of life. Such leadership, to be effective, must have an understanding of how our knowledge and our emotions combine to exert influences that strengthen the humane conceptions of life and give hope to all mankind. And imperfect as it may be, our system of higher education is the greatest single contributing factor to bringing about such influences.

The most satisfying definition of education I have been able to find is a deceptively simple one given by Edith Hamilton, that wonderfully astute and beautifully articulate classical scholar. She says, "To be able to be caught up into the world of thought—that is to be educated." And to be "caught up into the world of thought" means, in essence, to become a mature being, aware and concerned. One cannot be a regular inhabitant of such a world of thought without having profound and permanent changes take place within oneself.

It is the function and even the duty of the university to bring about such changes, since they will be the distillation of all the classroom hours, the laboratory sessions, the sympathetic or abrasive personal interrelationships with fellow students and teachers, the plays and concerts and lectures, the social events, the athletic rivalries, the hours of quiet reading and the hours of heated discussion—in short, the residue of intellectual and emotional power remaining

after all the day-to-day experiences have boiled away. If the right formulas have been used which include suitable proportions of encouragement and pressure, the correct balance between subject matter and judgments, the proper amount of assistance coupled with a judicious amount of aloofness when the student tends to become dependent, the skillful amalgamation of the contemporary and the constant—given all this, a mature, independent, individualized person should emerge.

But one may ask, and rightly, what do we mean by a mature person? What are the elements that join together to form such a man or woman? If we are willing even for the moment to agree that the development of mature people is a function of the university, can we agree on what makes them mature? Is it the subject matter they study or the people they know or the organizations they join? Is it the sophistication of their social contacts or the worldliness of their experience? Does it demand physical stamina or spiritual tendencies, together or separately? Does it ask for callousness or sensitivity, for gaiety or seriousness? Does it demand that youthfulness be cast aside? Is it an attribute of social consciousness or a religious frame of mind or a power to face up to material necessities? Is it all or some or none of these?

These are all legitimate questions. I can best try to answer them by sketching out what I believe to be the elements of maturity in our society, elements that represent what is left or what should be left within your heart and mind after having been a member of an academic community for four years. And let me say parenthetically that these same elements relate not only to the student but to the institution itself.

The first of these elements is an awareness of responsibility. Many students come to college at a point in their experience when their every step has been guarded lest they stumble, and eager hands have supported them lest they should fall and be bruised. Every rough spot has been made easy, every failing has been excused on the basis of youth, every crisis has been met with the help of someone, whether parent, teacher, or other. But by the time these students are graduated, all this will have been changed. Responsibilities that arise from day to day or week to week will be theirs to shoulder alone or with their peers. The world will not condone the student's errors of omission and commission indefinitely without forcing him

to pay a penalty. And if he insists upon shirking responsibilities, he in turn will be forcing a penalty upon the world for he will be shaping it in his own indecisive image. After all, individually and collectively students *are* tomorrow's world. It is not too early for them to begin to remember this fact regularly.

Thus the university should and, I hope, will move steadily toward making the student independent and responsible. It will urge him to look upon his education as a broad pattern and to take a major role in weaving that pattern. It will expect him, as the weeks and months pass, to make decisions and to take the consequences for them when they are wrong. It will reply to many of his questions with still more questions rather than with easy answers. This is not to say that the university will ignore him, but rather that it will look to him to decide for himself on the system of study and living that can afford him the fullest measure of development. It will listen willingly but not indefinitely and not always responsively to his requests that someone else tell him what to do, for he will now move toward the age when he should and can contribute more and more to the decision himself.

This awareness of responsibility reflects itself not only in the large and small aspects of his personal life but also in the life of the community he shares with others. Life is a combination of preoccupations: with his own opportunities and problems, and with those of the community of which he is a part. And if he wishes, he can learn this lesson during his university years. All around him are the activities that weld us into an identifiable entity and give us our own character as a campus. He can adopt attitudes of apathy and aloofness toward these, should he so desire. If he does, through force of habit he will probably carry along with him later the same attitudes to apply to his citizenship responsibilities in the community. Or, out of a sense of belonging, he can give part of himself and his energies to the task of making campus life more meaningful for everyone. Whatever talents he has that lend themselves to the general betterment are a gift to him and are meant to be shared, not to be handled selfishly. The time to learn the lesson of generous participation and constructive support is now.

In the awareness of responsibility, therefore, we find a major step forward to maturity. The breadth with which we are able to de-

velop and measure our responsibilities is a key to our later effectiveness in strengthening a democratic society.

The next element is an unending curiosity leading to serious scholarship. It is a well-known adage, but a valid one, that a university is dedicated to the search for truth. This seems a simple and, in many ways, obvious kind of statement to which everyone can piously agree. But I should warn the student that in the straightforwardness of this belief lies a power greater than all our man-made nuclear weapons. The stubborn insistence of the scholar that he must take his stand on the search for truth wherever it may lead him is the underlying cause for all the suspicion, mistrust, and calumny to which he finds himself frequently subjected. His quandary on the one hand is that the world of reality adjusts itself to the art of compromise; that it can sometimes set aside principle for expediency and not reap the consequences for a long time; that it need not, if it chooses, go to extremes. On the other hand, however, the scholar knows that the truth never lies between right and wrong and that halfway stations are a delusion. He knows that he can all too frequently make no predictions as to where his search will lead him or what the results will be. He knows that he must admit to discovering the unpalatable and the meretricious as well as the noble and forthright. He knows the danger of curiosity, and he knows also, as Professor Edmund Morgan of Yale says, that a university "is a place where the world's hostility to curiosity can be defied." And Professor Morgan goes on with what will seem to some an outrageous statement but which those of us who are dedicated to academic life know is the only possible point of view. He says:

> The search for [truth] has again and again overturned institutions and beliefs of long standing, in science, in religion, and in politics It is easy enough to see today that these past revolutions brought great benefits to mankind. It was less easy to see the benefits while the revolutions were taking place, especially if you happened to be quite satisfied with the way things were before. Similarly it is not always easy today to see that the satisfaction of a scholar's curiosity is worth the disruption of society that may result from it.

During the undergraduate years and perhaps the graduate years to follow, the extent of the student's curiosity and the willingness

on his part to pursue the truth without equivocation will determine whether or not he belongs in the ranks of scholars. And even if he should fall short and step aside, his university experience should give him the kind of mature judgment that makes him realize as a citizen how essential is this freedom of curiosity and freedom of search on the part of his fellow citizens who have chosen to be scholars. If we could recapture this spirit in America as it was once fiercely championed in ancient Greece, we should be taking an enormous stride forward as a democratic nation with intellectual understanding. Our commitment to freedom must be unequivocal and absolute.

Another vital element of maturity is an awareness of the values of privacy. I come now to what may seem to some an unimportant factor but is in reality one of the most difficult attributes of maturity to capture. This is because of the nature, the demands, and the temptations of our modern world. It is a revealing circumstance that as we have created more leisure for ourselves through modern inventions and social changes, we also have developed other inventions and brought about other changes that tend to destroy our privacy or at least make it seem unnecessary or undesirable to us. Moreover, in whatever moments of privacy that remain, we tend to become addicted to hours of aimless occupation largely dependent upon outward stimuli that effectively keep us from using our minds.

If a major purpose of education is indeed to put us into the world of thought, then as educated men and women we should learn how important are our hours of privacy and how insistent we must be upon such hours. It is during such solitary times that the mature student comes into his own. A very real test of the educated man is what he can find to do when he is left to his own devices with no gadgets to help him. If I could have my way and could create the Utopian university, I would urge that every student live alone. This would guarantee that after all his gregarious urges were fulfilled, there would be a place to which he could retire, shut the door, and be alone with his thoughts, his books, and his dreams. Out of his reflective moments might come creative and imaginative ideas with some chance of their being pursued without interruption.

The university cannot even come close to providing Utopia in this regard, but it can urge the student to struggle mightily for whatever privacy he can achieve. It can help him by using more of the facilities it has as places for quiet study. There are still times

and places to be alone. The student or scholar need not be antisocial, but he must guard his meditative opportunities or his intellectual development will be arrested.

Still another element of maturity is a pervading sense of humility. The danger of our arrogance grows ever greater in a world where the pace of scientific and technological discovery has accelerated by geometric proportions. We probe into space, we search the bottom of the sea, we change men's attitudes with drugs, we predict and accomplish breakthroughs in area after area of knowledge hitherto deemed fantastic. And in the exhilarating flush of discovery we can, if we are not careful, lose our perspective and our sense of values.

There is a point, however, at which we reach maturity as scientists or researchers or scholars. And that point can and should be reached during one's university experience. Kierkegaard identified this so well when he said that maturity consists in the discovery that "there comes a critical moment where everything is reversed, after which the point becomes to understand more and more that there is something which cannot be understood." Such an awareness can only make one humble and should lead to a more comprehensive vision of the universe and the role we play in it. In spite of all we have learned and discovered, man's problems in his relationship to man remain the same. This is a sobering and deflating thought.

Let me strengthen what I say by giving a quotation from the historian Arnold Toynbee, who, although fallen somewhat out of favor lately among intellectuals, has an unerring sense of the sweep of time and the resulting impact upon man. He says:

> In the fields of both non-human and human nature, one new province of knowledge after another has been opened up and conquered for mankind. This increase in knowledge has resulted in an increase in ignorance; and, though that looks like a paradox, it has a simple explanation. The word "knowledge" is ambivalent. The vast store of knowledge accumulated over the centuries by thousands of inquiring minds is no more than potential knowledge until some individual mind has mastered it. But the greater the number of the industrious animalculae at work on building up the coral reef of the sciences, the harder it becomes for a single representative of this puny breed to survey the reef as a whole. He will have performed a prodigy if he succeeds in mastering one branch of the coral, or even one twig. The mental capacity of an individual human being within his effective working lifetime is one of the constants in human affairs. Even when

the progress of medicine has lengthened modern man's expectation of life and has relieved him of the diseases that sapped his forefathers' vitality, the resulting increase in his capacity will have been trivial compared to the contemporary increase in the amount of what there is to know; and the degree of our ignorance is measured by the breadth of the gulf between our actual knowledge and the knowledge that is potentially ours, but which could only be acquired by an individual if he had a superhuman mental capacity that is quite beyond his reach.

This kind of realization, therefore, should increase our sense of wonder and mystery even as our knowledge increases, and should fill our hearts with humility and a reverence for the ineffable gift of intelligent and spiritually centered life vouchsafed to us alone out of all living creatures. And this, too, is a lesson to be learned from the university.

The fifth element of maturity is an ability to be articulate coupled with a compulsion to communicate. Just as most of us agree on the primacy of the search for truth as an academic purpose, so do we agree in educational circles and elsewhere on the necessity to be understood clearly and unmistakably in what we say or write. And yet, in spite of this agreement, the general lack of articulateness among students and the inadequacy of our instructional methods to bring about a sure command of language continue to be the major obstacles against entrance into the world of thought. Many critical things have been said about modern education in this regard. Some of them have generated more heat than light, however. The crux of the matter is that as students or as faculty who teach students, neither has been truly willing to go through the arduous, self-disciplining tasks of training and being trained that are requisite to becoming or creating an articulate person.

Yet we know in our hearts that there is no short cut to the hours of vocabulary study, of practice with sentence construction and word usage, of drills in organization of ideas and their presentation, of experience in standing on one's feet and expressing oneself orally with cogency and decorum. Even if one cannot be felicitous in expression, one can always be clear and correct. Today's world literally lives by communication. When that communication is carried on accurately, the danger of tensions lessens, whether among individuals or among nations.

Particularly in the world of scholarship does this need for articu-

lateness become pressing. For the mature scholar has a compulsion to communicate. Not only is he curious; he has a never-ending drive within him to tell to anyone who will listen what he has learned or discovered. The scholar who does research and never records what he finds in terms that others can grasp is not really a scholar at all. For the true scholar cannot and should not be quiet about what he knows. Whether his information is practical or not, the world needs it and he has a responsibility to supply it. The student who becomes adept in both writing and speaking can eventually be a scholar with communicative ability in both, and thus is more likely to be a truly great teacher. And even if he chooses not to be a scholar or teacher, such skills will serve him well in his career and his citizenship.

A sixth element of maturity is a passion for participation in the significant events of life. The truly educated person sees his relevance to the world in which he lives. He understands that he shares with others the responsibility for its mistakes and its difficulties. As his knowledge and wisdom grow, so also should there grow within him an increasing urge to be of help. The mature individual cannot stand by passively while the important and significant problems of his community, his country, and his world remain unsolved. He knows that even though he himself may not have contributed personally to the creating of the difficulties, it still devolves upon him to share in their solution. Otherwise he eventually becomes no more than a selfish clod.

The world may indeed be suffering from many ills, but this is an exciting, even thrilling time in its existence and therefore in ours. We are about to make great political decisions in our own country. Tremendous struggles having social, economic, and ideological overtones are taking place in our hemisphere and on other great continents. Every day seems to bring forth its own new crisis. And every crisis will be solved only by the active, dedicated, even passionate assistance of mature men and women of good will everywhere.

A student's educational experience within the university should somehow give him not only the realization that these great movements are taking place but also the eagerness to be involved actively with the world's dramas, even though his individual role is only a bit part. One cannot stand aside from the major currents of world

change and still be fully alive. One cannot even ignore the lesser and undramatic episodes that mark the complications and progress in the development of the local community without admitting that he is shirking his democratic responsibilities and squandering his democratic rights.

It is by no means too early for students to be concerned over the social and civic problems of their own communities. It is not too early for them to select those areas of particular interest and to begin to determine how they will ultimately participate. The eagerness and the sense of belonging they develop now can and will be a major factor in how large will be the satisfactions of life they find eventually. Such satisfactions will grow in proportion to how much you work for others. Maturity encourages selflessness.

The final element of maturity is that of a recognition of individual worth. I suppose that in some ways the student's awareness of and belief in the dignity of the individual are the core of his education and therefore the true measure of his maturity as a believer in democracy. Certainly the place and importance of the individual form the battleground where we find ourselves in complete conflict with communist ideology. And yet unless this becomes so much a part of our education that it is eventually part of our very selves, how easy it is for us to forget or ignore.

The history of Western man reveals a steady succession of steps by which the struggle for the independence of the individual and for the recognition of his worth has gradually been won. There have been occasional reverses in this struggle, but the total movement has been forward, decade by decade, century by century. Today the struggle evidences itself most dramatically in the efforts of underdeveloped nations in Asia and Africa to lift their people and the total body politic to new heights of possibility. In our own country the most intense effort centers around the Negro and his bid for equality not only under the law but through acceptance in the hearts of men.

To achieve a mature attitude toward these movements, one must place them in the framework of history, one must be cognizant of causes and effects, and, above all, one must become imbued with the compassion that makes us weep inwardly when others starve or are ill-treated. If our own souls are precious to us, so too are the souls of our brothers everywhere in the world. If we yearn for our

own recognition and cherish our own dignity, we can do no less for those less fortunate than ourselves. Education helps us towards this attitude and makes us simultaneously world-conscious and individual-conscious.

The philosophy the university adopts in its relationship with individual students has great effect upon whether or not they will accept and champion such an attitude. When the university feels keenly the need to consider the student as an individual no matter how many times he is multiplied, then the latter feels that same concern for those around him and elsewhere. When the university uses rules and regulations inflexibly and without regard for the human equation, then the student even with his occasional rebellions against such edicts will learn the selfsame habits of inflexibility. He will tend to think in terms of groups or conglomerations or associations that can be classified and categorized rather than of persons, each with his individual prerogatives and responsibilities and, most of all, each with a dignity of self that calls for preservation and nurture. This is an important lesson for the maturing student and the maturing university to learn together.

The university's task as an institution, therefore, is to bring about not merely the whole man but what Woodrow Wilson called the "wholly awakened man." It is to bring to students a sense of the action and the passion of the time and to give them the maturity to turn such action and passion toward positive and constructive ends. And the first part of our task is to have these students aware that as of this moment they stand in danger of being caught up in the world of thought, the world where we think they ultimately belong else we should not have chosen to have them here. If they truly look upon this as a danger or even as an obstruction to their other reasons for coming, then they should withdraw and avoid what is bound to be an unhappy experience. But if they have even some slight restless stirring within them, some still unidentifiable urge to learn, to think, to act, and so to be helpful in this world to the utmost of their capacities, then there is no limit to their potentialities as scholars and as humane beings.

In the process of making available to students the elements of maturity for themselves, we have been simultaneously developing

the intellectual maturity of the university campus. For, as I have already hinted several times, many of the same elements I have just described apply to the university as well as to the individual. The mature university has an awareness of responsibility; it has a zeal to discover, to be curious, to search for the truth; it has a commitment to freedom that transcends any expediency or compromise; it must be able to explain itself articulately and it must pass on to the world whatever it learns or discovers; it is a part of life, not aloof from it; it has deep concern for the dignity and worth of the individual whether on the campus or anywhere in the world. And just as we measure students in their development, students have the right to measure the university as to the degree of maturity it makes evident by its atmosphere and its actions.

We are all members of an intellectual community, bound by the same purposes, the same desires, and the same loyalties. I think the greatest hope I could have for each student is that he swiftly becomes conscious of his possibilities. Then he will be a wholly awakened young man or woman, the kind America needs so desperately, the kind that can combine thought and action and bring us closer to the ideal of the humane man in a humane world.

THE HERO

By Florence Becker Lennon

He killed a million bison. When he died
They blew a hole in Lookout Mountain,
Slipped him in, and ran a rail around the grave.

By day people throw real money on the marble slab;
Real guards collect the coins to run the lodge.

By night four million phantom hoofs
Dance on his phantom head.

Please god—let there be a real hell
Where he must beard the bison.

THE MEMORY OF BARBARISM IS THE RECOLLECTION OF VIRTUE

By Richard Emil Braun

Perhaps, when we the strangers in the bar's blue light
turn liberal, you'd claim fraternity
or clan and say Detroit is turned American
by the community of appetite.

There was this hurried time of fear of the last bell,
our sure prognostication it would be
somber so soon to face a sky of December
that impended on the light blue snow swell,

when someone turned and told of Caucasian wheat fields,
the harvest sun, a last effrontery.
His father decapitates their Turkish master.
The village is invested. No one yields.

Then, you may know, the last round came, and with it pride.
I swivelled round to face my own whiskey
recalling anecdotes in turn of ancestral
snowfields and running wolves and fireside.

THE ATTACK

By JACK ANDERSON

Quickened by the marching air
And its guerilla warfare,

I'm recruited by surprise.
Bedroom curtains at sunrise

Wave white flags. Leaf plunders tree.
My pulse goes striding briskly.

A blade of grass is my gun.
With each breath the accordion

Of my lungs plays battle hymns.
In their showers of rhythms

I grab great fistfulls of spring
And sap and blood keep rising.

I want to go start a fight
With the brass knuckles of light.

Experiment in international education

WYN F. OWEN

Today almost fifty thousand foreign students are enrolled in American colleges and universities. This number represents more than an eight-fold expansion over the pre-World War II enrollments. Over one-third of these students are doing graduate work. Thus, at first glance, the contribution of American universities and colleges to the educational needs of less well-endowed countries is quite impressive. The contribution, however, still falls far short of what is desperately needed for world economic development and world peace.

At a time when people generally are concerned about whether American higher education can adequately accommodate the surge of American students anticipated in the years immediately ahead, the problem of how to handle, at the same time, a probable additional eight-fold, if not greater, expansion of foreign student enrollment is one that is still not receiving anywhere near the attention it deserves. There is also a related challenge to which this article is primarily addressed. This concerns the *quality* of the opportunity that is and will be offered to the foreign student within the limits of the total available resources.

Important questions have arisen concerning how well universities are doing the job of providing higher education for the foreign students now attending them. Many of these questions concern the problem of whether the regular curricula sufficiently help the foreign student to comprehend the practical and theoretical problems facing his own country. Responses to this challenge have ranged broadly from the introduction of various kinds of self-contained academic programs to the widespread presentation in most universities of new courses which are especially adapted to the needs of the foreign student as well as to the growing awareness of American students and faculty of the desirability of placing modern higher education in an international perspective. The achievements are already substantial, and continuing efforts in both directions are to be expected and are deserving of strong support.

Important as it is, however, to develop new and modified higher educational offerings for the foreign student, perhaps an even more important task is to ensure that the ordinary curricula are made available to this student on the most favorable terms for all concerned. The importance of this task is apparent when it is recognized that irrespective of what might be possible through special programs, most high quality foreign students will always aspire to a regular advanced degree from a well recognized university. Such students naturally are suspicious of anything that might be or might acquire the reputation of being only a "second class" degree. Furthermore, we should not presume that the basic curricula of American universities are so parochial that they are predominantly irrelevant to students with different national backgrounds.

There are several reasons why foreign students, even those with sound academic potentials, are likely to have difficulties in an American university. In the first place, the majority do tend to have serious limitations in available time and money. With few exceptions scholarships for foreign graduate students are quite unrealistic in terms of the amount of time necessary, even for a well-qualified American student, to complete a regular degree program. Inevitably the foreign student tends to be committed to a minimum time schedule regardless of frequent deficiences in level of preparation.

It is widely recognized that by far the majority of these students begin their programs of study with a significant language handicap and that they are unfamiliar with the relatively unique procedures of American university life as well as with the general conditions of living in the United States. These alone are sufficient to create a great many problem cases. In addition, many university personnel have become aware that behind the language handicap and the cultural uncertainties, there usually exist, particularly at the graduate level, serious deficiencies in preparation in the major field chosen by the student, a situation which should be expected and anticipated in view of the limited educational opportunities in most of the countries from which these students come.

Thus the foreign student inevitably presents problems additional to those of his academic counterpart in this country. Lacking the same alternatives, the foreign student who faces one or more of these difficulties tends to become much more of a charge upon the university and upon the time and efforts of the faculty members

who assume the direct responsibility for advising him. There are few universities that have not had unhappy experiences with foreign students who have not been able to maintain an adequate academic record or complete their academic programs within the time or financial resources available to them. Unfortunately it is almost inevitable that these cases cast a reflection upon the foreign student body as a whole quite out of proportion to its overall quality and performance.

A logical approach to many of these problems undoubtedly is to develop special preparatory programs adapted to the varying needs of the foreign student. This has long been recognized. Foreign student orientation programs of various types have been conducted for many years. Some are held in the students' own countries prior to their departure for overseas and some on shipboard during transit. The Institute of International Education currently administers eleven special centers of orientation each summer at different locations in the United States for newly arrived foreign students. Most universities also operate some kind of special orientation program for foreign students, and there are analogous programs associated with many of the special educational efforts in the international area under both private and public sponsorship.

Foreign student orientation has been an active experimental area in education for several years. The questions raised have been manifold. For example, what are the most efficient techniques in the teaching of English as a foreign language? Should orientation centers specialize by nationality? Where should such centers be located? How long should they last? What misconceptions of American universities and American culture and society do foreign students have and how can these best be corrected? What do Americans need to know about the foreign student in order to understand his problems and his aspirations? How can this knowledge best be transmitted to Americans who will have occasion to associate with the foreign student?

Much has been learned but much still remains to be learned. The Economics Institute, which last summer completed its fourth session, should be seen as a part of this wider experimental endeavor in the area of foreign student orientation. Its particular contribution lies in the attention it has given to the nature of the academic deficiencies of foreign students and to the degree to which

these deficiencies can be removed through rigorous preparatory instruction. As the first major orientation program in which admission is restricted to students with a common area of specialization—economics—it has provided an opportunity as well for experimentation in a number of other aspects of orientation.

The Economics Institute was initiated in 1958 under the sponsorship of the American Economic Association and with the support of a substantial grant from the Ford Foundation. Its first session was held at the University of Wisconsin and subsequent sessions at the University of Colorado. The Institute of International Education throughout has undertaken responsibility for the overall administration of the grant funds, for the processing of applications, and for general program arrangements.

Students attending the Institute are selected each year from among foreign students admitted for graduate work in economics at various universities and colleges for the academic year which will immediately follow the summer Institute. During the first four years of its existence, a total of 174 students from forty-four different countries attended the Institute prior to beginning regular graduate studies at forty-eight different universities and colleges in the United States.

The Institute is designed to provide approximately nine weeks of instruction in basic economic analysis, supplemented when necessary by instruction in English. Introductory and refresher course work in mathematical and statistical concepts and procedures relevant to economics is also provided for students whose assignments in economics and English are not excessive. Instruction in all areas is adjusted to the level of preparation of the individual student.

A limited social and recreational program is included in the Economics Institute. This, however, is deliberately arranged to supplement and not to conflict with the academic program. It is largely limited to the weekends and is integrated, insofar as possible, with the regular student activities connected with the summer session program of the host institution. The students are housed in a university dormitory where dining and recreational facilities are shared in common with American graduate students.

One of the fundamental propositions underlying the experiment is that language instruction is aided where it is set in the context of the student's major subject area. This is deliberately emphasized in the program through concentrated tutorials in economics and

through the integration of much of the written work in economics with the English instructional program. Class work in English draws upon such special techniques as have been developed in the teaching of English as a foreign language, special emphasis being given to sentence patterns and to oral, aural, and written proficiency. It should be noted that admission to the Economics Institute is restricted to students whose level of competence in English is sufficient for them to benefit from the academic instructional program. That is, the Institute does not provide beginning language instruction.

While lectures on the broad aspects of American culture and society have received minimum emphasis in developing the program of the Economics Institute, a consistent and comprehensive lecture and discussion program relating to the development, structure, and functioning of the American economy has been incorporated. The latter is viewed as an essential complement to the central instructional work in the theoretical aspects of economics but there is little doubt that it also serves an important general orientation function. Indeed there are many who believe that this indirect approach to the introduction of foreign students to America has particular merit.

A final important component of the Economics Institute program is the provision of a detailed report on the academic status, competence, and interests of each student to the departmental chairman who is to supervise his subsequent academic studies. This report is designed to help integrate the Institute experience with the student's overall program and to facilitate the work of the academic advisors responsible for designing an appropriate schedule, especially for the critical initial semester.

It is possible to demonstrate important findings and accomplishments relevant to some of the questions raised earlier in this article on the basis of the evaluation program completed within the context of the first three sessions of the Institute. The students in each of these sessions took comprehensive examinations in English and designated subject matter at the beginning and at the end of the Institute. The initial tests were utilized primarily as a means of facilitating a rapid classification of the group into fairly homogeneous instructional sections. However, comparable examinations, administered at the end of each Institute, made possible an estimate of both the final standing of the students and of the degree of improvement registered during each program. In addition, the admin-

istration of the Graduate Record Advanced Test in Economics at the end of each Institute provided a basis for the comparison of each of the different Institute groups and the basic reference group of American students established by the Princeton Testing Service. These testing results have been supplemented also by a systematic survey of student and staff opinions regarding the value of the program conducted at the conclusion of each Institute.

On the basis of this documentation, the following general conclusions seem to be warranted:

(1) The assumed serious deficiency in the academic preparation of beginning foreign graduate students is fully substantiated, as Table I shows. This finding is particularly significant, since the students have tended predominantly to be scholarship students and hence probably at a somewhat higher level of preparation than the average foreign student. It should also be of interest that the deficiencies rank in this order: first, familiarity with the United States economy; secondly, preparation in theoretical economics; and, thirdly, competence in elementary mathematics.

The significance of the first deficiency lies in the degree to which it indicates a limited understanding of the context of a great part of the economic discourses taking place in American universities. In regard to the third deficiency, it probably is presumed by many economists that the lack of prior training in mathematics is relatively more serious among foreign students than the testing results indicate. Testing results, however, should not obscure the fact that a substantial majority of students in the Economics Institute programs have been seriously lacking in this area. Because this is true, preparatory work in mathematics has formed an essential and increasingly emphasized part of the program.

(2) It is significant that on the basis of the entrance tests a high proportion of the Institute students demonstrated a considerable language handicap for graduate work even though these students were selected from among incoming foreign students having a high level of language preparation. The importance of the language handicap cannot be too strongly emphasized.

(3) Table I also provides a documentation of progress recorded during two Institute programs. In general it must be rated as quite striking. There can be little doubt on the basis of this record of the effectiveness of this type of program in removing or considerably

TABLE I

Member Student Standings on the Basis of the Entrance and Final Examinations Administered in the Economics Institutes of 1959 and 1960
Total Students Tested: 93

Area Tested	*Entrance Classification*			*Final Classification*		
	A* %	B* %	C* %	A* %	B* %	C* %
English: Aural Comprehension	22	52	26	42	42	16
Economics: Microeconomic Theory	15	31	54	70	27	3
Macroeconomic Theory	3	60	37	50	45	5
United States Economy	1	30	69	33	54	13
Elementary Mathematics#	36	27	37	74	18	7

*Class A = Student well prepared for graduate work in economics in terms of area tested.

*Class B = Student marginally-to-well prepared for graduate work in economics; that is, a strong record in first year graduate studies somewhat questionable in view of the indicated deficiencies. A reduced load in the first semester generally advisable.

*Class C = Student inadequately prepared for graduate work in economics. Further preparatory studies should be undertaken before student attempts graduate program.

#Approximately 20% of the students did not receive direct instruction in Mathematics due to heavy program loads in other class work.

Note: The above scores are based on an identical grading of entrance and final examinations. A correction has been introduced for any differences in the average difficulty of the matching examinations used in each case. The classification of scores into Classes A, B, and C was based on the composite judgment of the staff of the Economics Institute. The classification is identical for both entrance and final tests.

reducing the academic deficiencies of beginning foreign graduate students. Particularly interesting is the progress made in mathematics on the basis of a quite limited program. The concentrated effort in the area of economic theory also proved remarkably successful.

(4) The progress made in familiarizing the students with the United States economy has been relatively less impressive than in the case of economic theory and mathematics. This is an interesting fact both in terms of the instructional challenge it presents and in view of the probable handicap that ignorance or misinformation in this area has on successful graduate work in economics and other fields in American universities. Much remains to be learned in this area but the record amply demonstrates the need for instruction in the institutional-policy area as a part of academic orientation.

(5) The record of progress in the English language is also deserving of special notice. The figures presented in Table I are based on one test in aural comprehension but these results were found to be closely correlated with overall language performance. The entrance test results provide further documentation of the seriousness of the language handicap even among the best prepared foreign students. The results in the final tests indicate limited improvement in spite of the quite intensive language instruction provided in the Economics Institute. Insofar as this program involved the careful selection and use of available teaching aids in the area of teaching English as a foreign language by a well-experienced staff, the results would seem to point up a critical need for further extensive and systematic research in the problem of teaching English as a foreign language. The need is particularly apparent in respect to the relatively advanced levels of instruction which are appropriate for the kind of student attending the Economics Institute. There is an obvious need also to emphasize that foreign students planning to undertake graduate work in the United States should complete more advanced training in English in their own countries. This in turn calls for special efforts in the training and effective placement in other countries of competent teachers of English.

(6) The Economics Institute experiment has demonstrated quite clearly that English language and specialized subject matter in-

struction can be combined effectively in such a program. Furthermore, where the level of language preparation is such that English instruction can be viewed as supplementary to subject matter instruction in the program, language training would seem to be greatly facilitated by being associated with an academically oriented program. This is less apparent, however, when the language handicap is more critical.

(7) It should be noted that only the very exceptional student is able to progress from category C in either English or economics at the beginning of the Institute to a significantly higher category by the end of the Institute. Even less successful were students who were admitted with serious deficiencies in both English and economics. This is to suggest that while such students, in the absence of any adequate alternative, can have an experience of great value in the Institute, a program of the present duration is not sufficient to meet their needs fully. The present program cannot be viewed realistically as a substitute for undergraduate work in the major field or for the attainment of a basic level of competence in language. Where these are not present, there must be longer programs or more rigorous selection.

(8) Just as there is a lower limit in terms of language and subject matter preparation below which a summer Institute is inadequate, there is also an upper limit beyond which such a program is of minimum value. The experience of the Institute suggests that a student should have a substantial deficiency either in language or in a critical subject matter area—for example, in the case of graduate students, in economic theory or mathematics and statistics—in order to qualify for admission to such a program. Where this is not the case a shorter and somewhat different orientation program would be more appropriate.

(9) Table II summarizes the students' scores in the Graduate Record Advanced Test in Economics of the Educational Testing Service and provides a comparison with a basic reference group of seniors trained in economics in American universities. The test was administered at the end of each of the three Institute sessions.

In interpreting these scores it should be borne in mind that the Economics Institute students invariably face a significant handicap in the particular examination used. This derives from their lack

TABLE II

Summary of Results of Graduate Record Advanced Test in Economics

Graduate Record Score	Economics Institute Students						United States Basic Reference Group Seniors#
	1958		1959		1960		
	Number	*Per Cent*	*Number*	*Per Cent*	*Number*	*Per Cent*	*Per Cent*
700 and over	2	5.7	2	4.1	2	4.4	4.0
600 - 699	5	14.3	6	12.5	5	11.1	11.0
500 - 599	11	31.4	14	29.2	18	40.2	28.0
400 - 499	15	42.9	21	43.8	16	35.5	43.0
Under 400	2	5.7	5	10.4	4	8.8	14.0
	35	100.0	48	100.0	45	100.0	100.0
Score Mean	514		496		516.5		494

#Source *Graduate Record Examination Scores for Basic Reference Groups,* Educational Testing Service, Princeton.

of familiarity with the examination method and from language difficulties, which are intensified by the time limit on the examination. Further, it should be noted that in the selection procedures for the Institute, foreign students with English as a native language and a strong record of training in economics are seldom admitted to the program. With these facts in mind, it is apparent from the table that the general level of competence of the graduates of the Economics Institute has been commendable. The results point to the likelihood that by American standards foreign students attending American universities are not only highly motivated but are of relatively high academic capacity.

(10) The experience of the Institute program consistently has been that even the smallest instructional groupings, when organized on the basis of academic test scores, invariably result in a variety of nationalities. There is no significant correlation to be drawn between national origin and performance. The records of individual Economics Institute students, however, do indicate a decided relation between student performance and universities of origin.

(11) Even within the limits suggested in (7) and (8) above, a great range in subject matter and language competence is to be anticipated. This alone puts a high premium on the desirability of instruction in relatively small groups. In the Economics Institute an effective size for instructional groups has proved to be from six to eight students. Such a program is relatively expensive to operate. At this time, for a program comprising fifty to sixty students and nine to ten weeks in duration, direct operation costs, including student living expenses, are in the neighborhood of $45,000 per year. However, there can be little doubt that the costs of initiating foreign students into graduate work in American universities without the benefit of such a program are considerably higher.

(12) Although not specifically proposed in the original design of the experiment, another extremely important achievement of the Economics Institute program deserves to be recorded. This comes as a by-product of establishing a close working relationship among students of various national backgrounds but with a common professional interest. Time and time again, the students have referred to the benefit derived from this aspect of the experience. It has considerable immediate value in the operation of the program it-

self. One might anticipate that it also has a lasting value of potentially great significance.

(13) Each of the students admitted to the Economics Institute had previously been granted admission to a graduate school in the United States for regular academic studies. The fact that in each Institute a small but significant number of students proved incapable, even with the aid of this special opportunity, of overcoming serious deficiences for effective graduate work points up a wider problem in foreign student selection. This matter obviously warrants the most careful thought if the limited opportunities for foreign student training in the United States are to be allocated to maximum advantage.

What I have listed above are some of the more obvious conclusions to be drawn from the Economics Institute experience. The evidence strongly suggests that specially designed academic orientation for entering foreign students is a very promising innovation in international education. There can be little doubt that the Economics Institute deserves to be continued on a permanent basis, and the possibility of establishing similar programs in other fields should certainly be seriously considered. There is also a need for similar graduate preparatory work to be initiated on an academic year basis. This would be a desirable complement to any concerted effort to achieve the much needed expansion in foreign student enrollments in American universities. The Economic Institute should be viewed as merely a first step in the right direction.

authors

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an Honors Convocation Address at the University of Colorado last spring.

FLORENCE BECKER LENNON ("The hero," poem, p. 176) has a thirty-minute program of poetry readings and commentary on a New York City radio station. She is author of *Forty Years in the Wilderness,* published in June by Linden Press, poetry affiliate of Centaur Press, London.

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